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Award Number: DAMD17-00-2-0002

TITLE: Support for the Resident Research Associateship Program with the U.S. Army Medical Research and Materiel Command

PRINCIPAL INVESTIGATOR: Judith K. Nyquist, Ph.D.

CONTRACTING ORGANIZATION: National Research Council
Washington, DC 2001-2736

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PREPARED FOR: U.S. Army Medical Research and Materiel Command
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For Abstract see report

15. SUBJECT TERMS
Infectious disease; combat casualty care; chemical and biological Medical defense; military operational medicine; biomedical research

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THE NATIONAL ACADEMIES
Advisers to the Nation on Science, Engineering, and Medicine

National Research Council
RESEARCH ASSOCIATESHIP PROGRAM

with the

U.S. Army Medical Research and Materiel Command (AMRMC)

Annual Contract Technical Report

Report Period: 01/24/06 – 01/23/07

DAMD-17-00-2-0002

Publicity

The National Academies Research Associateship Programs for the report period were announced to the scientific community in the fall of the preceding year. Publicity materials describing the National Research Council- U.S. Army Medical Research and Materiel Command [AMRMC]. Programs were distributed in November to presidents, graduate deans, and heads of appropriate science and engineering departments and minority-affairs offices of all academic degree-granting institutions in the United States. An e-mail announcement of the programs was sent to these same contact points prior to each review deadline. Promotional materials were sent to Laboratory Program Representatives, Associateship Advisers, and other interested persons. General advertisements of programs were placed in leading scientific and engineering publications. Publicity materials and other related information were made available on the internet. Research Associateship Programs staff attended numerous professional scientific and engineering meetings and minority recruitment events to promote the various programs and to meet with prospective applicants throughout the year.

Requests

Application materials were distributed in response to specific requests for information about the AMRMC Research Associateship Program or as a result of general requests by persons whose fields of specialization appeared to be appropriate for the research opportunities available in the AMRMC laboratories.

Competition

Panel reviews of applicants for the Research Associateship Programs, including those with the Army Medical Research and Materiel Command are conducted in March, June, September, and/or January of each year. The following is a breakdown of the action taken with the applications during the report period.

	Sept review of Aug app-06	Mar review of Feb app-06	June review of May app-06	Nov review of Jan app-07	TOTAL
TOTAL APPLICATIONS	**3**	**11**	**5**	**8**	**27**
Number of Applications Reviewed	**3**	**11**	**5**	**8**	**27**
Applications not recommended (did not pass Review)	0	0	0	1	**1**
Applications Recommended (passed Review)	**3**	**11**	**5**	**7**	**26**
Awards offered	3	9	3	4	**19**
Awards accepted	3	9	3	4	**19**
Awards declined	0	0	0	0	**0**
Awards withdrawn by RAP (NRC officially withdrew award *after* it had been accepted.)	0	1	0	0	**1**

Associates' Citizenship

Associates on tenure between 08/01/05 - 07/31/06 were citizens of the following countries:

37 U.S. citizens
6 U.S. permanent residents

1 India (Pending Perm. Residency)
2 Australia(J-1 Research Scholar)
1 Brazil(J-1 Research Scholar)
1 France(J-1 Research Scholar)
1 Germany(J-1 Research Scholar)
1 Ghana(J-1 Research Scholar)
1 Ireland(J-1 Research Scholar)
1 Japan(J-1 Research Scholar)
1 New Zealand(J-1 Research Scholar)
1 People's Republic of China(F-1 OPT)
1 Russia(J-1 Research Scholar)
1 Thailand(J-1 Research Scholar)

U.S. Army Medical Research and Materiel Command

Associate Name+ Adviser	Center	Tenure Dates Start/End	Termination Report	Adviser Report
Andres, Devon Katherine *Dr. Radharaman Ray*	U.S. Army Medical Research Institute of Chemical Defense	5/3/2006 - 5/2/2007		
Beitzel, Brett Forrest *Dr. Connie S. Schmaljohn*	U.S. Army Medical Research Institute of Infectious Diseases	1/12/2004 - 1/11/2008		
Bhonsle, Jayendra Bhausaheb *Dr. Donald P. Huddler*	(S) Walter Reed Army Institute of Research	7/6/2004 - 1/5/2008		
Bradfute, Steven Blake *Dr. Thomas W. Geisbert*	U.S. Army Medical Research Institute of Infectious Diseases	2/16/2005 - 2/15/2008		
Brittingham, Katherine Tracey Cecil *Dr. Sina Bavari*	U.S. Army Medical Research Institute of Infectious Diseases	9/11/2003 - 9/10/2007		
Cashman, Kathleen Anne *Dr. Mary C. Guttieri*	U.S. Army Medical Research Institute of Infectious Diseases	7/11/2005 - 7/10/2007		
Curtis, Kristopher Michael *Dr. Michael D. Parker*	U.S. Army Medical Research Institute of Infectious Diseases	8/15/2003 - 10/6/2006	Received	Not Recd
Dupuy, Lesley Conrad, Jr *Dr. Connie S. Schmaljohn*	U.S. Army Medical Research Institute of Infectious Diseases	5/2/2003 - 7/1/2006	Received	Not Recd
Emerson, Ginny Leigh *Dr. Robert G. Ulrich*	U.S. Army Medical Research Institute of Infectious Diseases	3/1/2004 - 4/14/2006	Received	Not Recd
Enterlein, Sven Gunter *Dr. Sina Bavari*	U.S. Army Medical Research Institute of Infectious Diseases	12/18/2006 - 12/17/2007		
Filippov, Andrei Alexandrovich *Dr. Apurba K. Bhattacharjee*	(S) Walter Reed Army Institute of Research	7/18/2005 - 7/17/2007		
Foley, Desmond Hector *Dr. Richard C. Wilkerson*	(S) Walter Reed Army Institute of Research	2/17/2004 - 9/16/2006	Received	Received
Fritz, Elizabeth Ann *Dr. Lisa E. Hensley*	U.S. Army Medical Research Institute of Infectious Diseases	3/3/2003 - 9/2/2006	Received	Received
Furtado, Marcio de Araujo *Dr. Debra L. Yourick*	Walter Reed Army Institute of Research	9/25/2006 - 9/24/2007		
Ghosh, Kashinath *Dr. Edgar D. Rowton*	(S) Walter Reed Army Institute of Research	8/1/2005 - 10/31/2007		
Glynn, Audrey Rose *Dr. Douglas S. Reed*	U.S. Army Medical Research Institute of Infectious Diseases	11/6/2006 - 11/5/2007		
Goff, Arthur James *Dr. Lisa E. Hensley*	U.S. Army Medical Research Institute of Infectious Diseases	8/20/2004 - 10/31/2006	Received	Received
Golden, Joseph Walter *Dr. Jay W. Hooper*	U.S. Army Medical Research Institute of Infectious Diseases	4/4/2005 - 4/3/2008		
Hoard-Fruchey, Heidi Marie *Dr. Michael Adler*	U.S. Army Medical Research Institute of Chemical Defense	7/19/2004 - 4/28/2006	Received	Not Recd
Honko, Anna Nichole *Dr. Lisa E. Hensley*	U.S. Army Medical Research Institute of Infectious Diseases	6/1/2006 - 5/31/2008		
Jensen, Victoria Margaret *Dr. Lisa E. Hensley*	U.S. Army Medical Research Institute of Infectious Diseases	7/19/2004 - 3/31/2007		
Jirage, Dayadevi Balappa *Dr. Norman C. Waters*	(S) Walter Reed Army Institute of Research	8/22/2005 - 10/10/2007		

+ (S) indicates the associate was a Senior.

Highlighted entries indicate no intry on the Award Init Screen but data on the Post Tenure Screen.

Associate Name+ Adviser	Center	Tenure Dates Start/End	Termination Report	Adviser Report
Johnson, Erik Andrew *Dr. Robert K. Kan*	U.S. Army Medical Research Institute of Chemical Defense	1/3/2005 - 1/2/2007	Received	Not Recd
Jones, Juli Erin *Dr. Allen Cymerman*	U.S. Army Research Institute of Environmental Medicine	2/6/2006 - 2/5/2008		
Kaba, Stephen Abanega *Dr. David E. Lanar*	Walter Reed Army Institute of Research	8/1/2005 - 4/30/2008		
Kalina, Warren Vincent *Dr. Sina Bavari*	U.S. Army Medical Research Institute of Infectious Diseases	9/10/2004 - 9/9/2007		
Keener, William Kelvin *Dr. Mark A. Poli*	(S) U.S. Army Medical Research Institute of Infectious Diseases	10/1/2004 - 9/30/2007		
Keyser, Brian Michael *Dr. Radharaman Ray*	U.S. Army Medical Research Institute of Chemical Defense	5/4/2006 - 5/3/2007		
Klas, Sheri Denet *Dr. Robert G. Ulrich*	U.S. Army Medical Research Institute of Infectious Diseases	12/6/2004 - 2/28/2006	Received	Not Recd
Kremenevskiy, Igor *Dr. Anthony E. Pusateri*	U.S. Army Institute of Surgical Research	9/6/2005 - 9/1/2006	Received	Received
Langston, Jeffrey Lamar *Dr. Gary A. Rockwood*	U.S. Army Medical Research Institute of Chemical Defense	5/12/2003 - 5/11/2006	Received	Not Recd
Liepinsh, Dmitry *Dr. Urszula Krzych*	Walter Reed Army Institute of Research	4/18/2006 - 4/17/2008		
Ling, Yun *Dr. Ashima Saxena*	Walter Reed Army Institute of Research	12/4/2006 - 12/3/2007		
McGann, Patrick Timothy *Dr. Apurba K. Bhattacharjee*	Walter Reed Army Institute of Research	1/8/2007 - 1/7/2008		
Miroshnikova, Olga Vyatcheslavovn *Dr. Ai J. Lin*	Walter Reed Army Institute of Research	2/25/2003 - 2/24/2006	Received	Received
Morefield, Garry Lee *Dr. Robert G. Ulrich*	U.S. Army Medical Research Institute of Infectious Diseases	5/12/2004 - 2/9/2007		
Nicoll, William Stanley *Dr. David E. Lanar*	Walter Reed Army Institute of Research	4/1/2005 - 3/31/2007		
Noble, Schroeder Marie *Dr. Donald P. Huddler*	Walter Reed Army Institute of Research	10/4/2005 - 10/3/2007		
O'Brien, David Kenneth *Dr. Arthur M. Friedlander*	U.S. Army Medical Research Institute of Infectious Diseases	7/1/2003 - 11/30/2006	Not Recd	Not Recd
Pearson, Brooke *Dr. Arthur M. Friedlander*	U.S. Army Medical Research Institute of Infectious Diseases	7/14/2003 - 10/13/2006	Received	Received
Picchioni, Dante *Dr. Thomas J. Balkin*	Walter Reed Army Institute of Research	7/5/2005 - 7/4/2007		
Reeves, Tony Elvern *Dr. David E. Lenz*	U.S. Army Medical Research Institute of Chemical Defense	6/1/2006 - 5/31/2007		
Rickards, Caroline Alice *Dr. Victor A. Convertino*	U.S. Army Institute of Surgical Research	5/31/2005 - 5/30/2008		
Ruff, Albert Leonard *Dr. James F. Dillman, III*	(S) U.S. Army Medical Research Institute of Chemical Defense	6/28/2006 - 6/27/2008		

+ (S) indicates the associate was a Senior.

Highlighted entries indicate no intry on the Award Init Screen but data on the Post Tenure Screen.

Associate Name+ Adviser	Center	Tenure Dates Start/End	Termination Report	Adviser Report
Rupp, Tracy Lynn *Dr. Thomas J. Balkin*	Walter Reed Army Institute of Research	1/23/2006 - 1/22/2008		
Shiraki, Hiroaki *Dr. Ai J. Lin*	(S) Walter Reed Army Institute of Research	11/13/2006 - 11/12/2007		
Silvestri, Lynn Shiels *Dr. Sina Bavari*	U.S. Army Medical Research Institute of Infectious Diseases	9/7/2004 - 1/31/2006	Received	Not Recd
Swanson, Katherine Irene *Dr. Russell E. Coleman*	Walter Reed Army Institute of Research	11/21/2005 - 11/20/2007		
Takhampunya, Ratree *Dr. Huo-Shu H. Huong*	Walter Reed Army Institute of Research	12/4/2006 - 12/3/2007		
Taylor, Shannon Lynn *Dr. Connie S. Schmaljohn*	U.S. Army Medical Research Institute of Infectious Diseases	6/8/2005 - 6/7/2007		
Tonduli, Laura Sabina *Dr. Bhupendra P. Doctor*	Walter Reed Army Institute of Research	2/17/2004 - 12/15/2006	Received	Not Recd
Toth, Stephen I. *Dr. Syed A. Ahmed*	(S) U.S. Army Medical Research Institute of Infectious Diseases	3/13/2006 - 3/12/2008		
Urso, Maria Laina *Dr. Edward J. Zambraski*	U.S. Army Research Institute of Environmental Medicine	7/10/2006 - 9/21/2006	Received	Received
Weeks, Christine Marie *Dr. George C. Tsokos*	Walter Reed Army Institute of Research	3/1/2006 - 8/31/2007		
Wilson, Paul Anthony *Dr. Jaques Reifman*	Center for Biomedical Computations Research	12/1/2005 - 3/30/2007		
Yokota, Miyo *Dr. Larry G. Berglund*	(S) U.S. Army Research Institute of Environmental Medicine	3/29/2006 - 3/28/2008		

56 Associates Listed

+ (S) indicates the associate was a Senior.

Highlighted entries indicate no intry on the Award Init Screen but data on the Post Tenure Screen.

February 2006

1- Recommended

TANG, SHUANG — Ph.D. Date: 2000
Citizenship: People's Republic of China — Shanghai Inst of Biochemistry
Adviser: Dr. Sina Bavari
Research Field: 3298
Research Title: Development of a Cell-Free System Utilizing Established Minigenome Replicons for the Study of Filovirus Transcription and Replication

A- Accepted Award (9 Applicants listed)

ANDRES, DEVON K — Ph.D. Date: 2006
Citizenship: United States — Oakland University/MI
Adviser: Dr. Radharaman Ray — Actual Starting Date: 5/03/06
Research Field: A037 — Termination Date: 5/02/07
Research Title: Evaluation of a Short Peptide Inhibitor to Counteract Botulinum Neurotoxin A (BoNT/A) Poisoning In Vitro and In Vivo

FURTADO, MARCIO D — Ph.D. Date: 2003
Citizenship: Brazil — Sao Paulo, U
Adviser: Dr. Debra L. Yourick — Actual Starting Date: 9/25/06
Research Field: 1829 — Termination Date: 9/24/07
Research Title: Evaluation of the Effects of Neuroprotectants in a Model of Seizure Induced by Organophosphorous Compounds

HONKO, ANNA N — Ph.D. Date: 2005
Citizenship: United States — Wake Forest University/NC
Adviser: Dr. Lisa E. Hensley — Actual Starting Date: 6/01/06
Research Field: A033 — Termination Date: 5/31/08
Research Title: Optimization of a Recombinant Vaccine against Marburg Virus in Nonhuman Primates

KEYSER, BRIAN M — Ph.D. Date: 2006
Citizenship: United States — Tulane Univ-Sch of Medicine/LA
Adviser: Dr. Radharaman Ray — Actual Starting Date: 5/04/06
Research Field: 2969 — Termination Date: 5/03/07
Research Title: Characterization of Apoptotic Pathways Induced by Sulfur Mustard in Pulmonary Airway Epithelial Cells: In Vitro Studies

LIEPINSH, DMITRY — Ph.D. Date: 2003
Citizenship: Latvia — Russian Academy of Medical Sci
Adviser: Dr. Urszula Krzych — Actual Starting Date: 4/18/06
Research Field: 3293 — Termination Date: 4/17/08
Research Title: Characterization of Hepatic Effector and Memory CD8+T Cells induced with Genetically Attenuated Plasmodium berghei Sporozites in Murine Model of Protective Immunity.

February 2006

A- Accepted Award (9 Applicants listed)

REEVES, TONY E
Citizenship: United States
Adviser: Dr. David E. Lenz
Research Field: 0931
Research Title: Generation and Characterization of Antibodies Specific to Organophosphorus Nerve Agents and Similar Neurotoxic Compounds for the Immunodetection of Nerve Agents
Ph.D. Date: 2006
Texas A&M University
Actual Starting Date: 6/01/06
Termination Date: 5/31/07

RUFF, ALBERT L
Citizenship: United States
Adviser: Dr. James F. Dillman, III
Research Field: 2968
Research Title: Investigation of Sulfur Mustard Induced Signal Transduction Pathways in Ocular Cells
Ph.D. Date: 1998
Johns Hopkins University/MD
Actual Starting Date: 6/28/06
Termination Date: 6/27/08

SHIRAKI, HIROAKI
Citizenship: Japan
Adviser: Dr. Ai J. Lin
Research Field: 0926
Research Title: Lead Optimization of 8-Aminoquinoline Derivatives as Antimalarial Agents
Ph.D. Date: 2001
Kyoto University/Japan
Actual Starting Date: 11/13/06
Termination Date: 11/12/07

YOKOTA, MIYO
Citizenship: Japan
Adviser: Dr. Larry G. Berglund
Research Field: P137
Research Title: Identifying Human Individual Variability for Thermal Strain Models
Ph.D. Date: 1997
University of Tennessee-Knoxville
Actual Starting Date: 3/29/06
Termination Date: 3/28/08

W- Withdrew after Review/Recommend

DEYDE, VAROUGH M
Citizenship: Mauritania
Adviser: Dr. Jay W. Hooper
Research Field: 2740
Research Title: Evaluation and Efficacy of Ribavirin and Neutralizing Antibody Treatment in Lethal Infection of Hamsters with Andes Virus
Ph.D. Date: 2004
University of Nevada

May 2006

1- Recommended

ROCHON, GILBERT L
Citizenship: United States
Adviser: Dr. Samuel K. Martin
Research Field: 2820
Research Title: Satellite Remote Sensing and Spatial Database Development in Support of Monitoring and Mitigating Incidence of Avian Influenza
Ph.D. Date: 1999
Massachusetts Inst of Technology

May 2006

A- Accepted Award (3 Applicants listed)

MCGANN, PATRICK T — Ph.D. Date: 2004
Citizenship: Ireland — Ireland, Natl U Of
Adviser: Dr. Apurba K. Bhattacharjee — Actual Starting Date: 1/08/07
Research Field: 2740 — Termination Date: 1/07/08
Research Title: Survival and Replication of Francisella tularensis in Macrophage

TAKHAMPUNYA, RATREE — Ph.D. Date: 2006
Citizenship: Thailand — Mahidol U
Adviser: Dr. Huo-Shu H. Huong — Actual Starting Date: 12/04/06
Research Field: 3297 — Termination Date: 12/03/07
Research Title: Assessing the Potential Attenuation Mutations and Genetic Stability of WRAI/GSK Attenuated Dengue Vaccines Recovered from Human Volunteers and Aedes aegypti Vector in Dengue Endemic Areas

URSO, MARIA L — Ph.D. Date: 2006
Citizenship: United States — U of Massachusetts-Amherst
Adviser: Dr. Edward J. Zambraski — Actual Starting Date: 7/10/06
Research Field: 2826 — Termination Date: 9/21/06
Research Title: Effects of Prior Injury on Skeletal Muscle Inflammatory Pathways in Response to Disuse and Reloading

8- Declined

AMITAI, GABRIEL — Ph.D. Date: 1981
Citizenship: Israel — Weizmann Inst of Science/Israel
Adviser: Dr. Charles B. Millard
Research Field: 0999
Research Title: Engineering Cell-Free and Polymer-Bound a/b Hydrolase Haloalkane Dehalogenases in Combination with other Enzymes for the Enhanced Catalytic Scavenging of Xenobiotics

August 2006

A- Accepted Award (3 Applicants listed)

ENTERLEIN, SVEN G — Ph.D. Date: 2005
Citizenship: Germany — Marburg, Univ of/Germany
Adviser: Dr. Sina Bavari — Actual Starting Date: 12/18/06
Research Field: 3298 — Termination Date: 12/17/07
Research Title: Mutational Analysis of the Structure Function Relationship of Ebola Virus Matrix Protein VP40

HAMMERBECK, CHRISTOPHER D — Ph.D. Date: 2006
Citizenship: United States — University of Minnesota-Twin Cit
Adviser: Dr. Jay W. Hooper — Actual Starting Date: 4/10/07
Research Field: A033 — Termination Date: 4/09/08
Research Title: Elucidating the Role of Cell-Mediated Immunity in the Pathogenesis of Hantavirus Infection Using the Andes Virus/Hamster Lethal Disease Model

August 2006

A- Accepted Award (3 Applicants listed)

LING, YUN
Citizenship: People's Republic of China
Adviser: Dr. Ashima Saxena
Research Field: 2969
Research Title: Mutagensis and Computational Investigations of Reactivation Mechanism of Nerve Agent-Inhibited Human Acetylcholinestease by Oximes
Ph.D. Date: 2006
U of Maryland-Baltimore County
Actual Starting Date: 12/04/06
Termination Date: 12/03/07

November 2006

1- Recommended (2 Applicants listed)

ACKERMAN, MICHAEL S
Citizenship: United States
Adviser: Dr. Charles B. Millard
Research Field: 8046
Research Title: Disruption of a Putative Vascular Leak Peptide Motif in the Ricin Toxin A-Chain Vaccine Candidate
Ph.D. Date: 2003
Johns Hopkins U-Medical Insts./MD

HATHAWAY, KYLE C
Citizenship: United States
Adviser: Dr. Rodney L. Coldren
Research Field: A008
Research Title: Developing Improved Methods for the Recombinant Expression of Avian Influenza Surface Antigens
Ph.D. Date: 2006
Melbourne, U

A- Accepted Award (4 Applicants listed)

BANKS, ERIC A
Citizenship: United States
Adviser: Dr. Thomas J. Walters
Research Field: 0999
Research Title: PPAR Agonists as Potential Therapeutics for Muscle Atrophy Associated with Major Burn Injury
Ph.D. Date: 2007
U of Tex-Hlth Sci Ct-San Antonio
Expected Starting Date: 5/01/07
Termination Date: 4/30/08

BIGGINS, JULIA E
Citizenship: United States
Adviser: Dr. Sina Bavari
Research Field: 3298
Research Title: The Role of Host Proteins Incorporated into the Ebola Virus Envelope in Enhanced Infectivity
Ph.D. Date: 2007
Baylor College of Medicine/TX
Actual Starting Date: 3/19/07
Termination Date: 3/18/08

OTTO, TAMARA C
Citizenship: United States
Adviser: Dr. David E. Lenz
Research Field: 1880
Research Title: Mutations in Human Paraoxonase 1: Design of a Bioscavenger
Ph.D. Date: 2001
University of Florida
Actual Starting Date: 3/01/07
Termination Date: 2/29/08

November 2006

A- Accepted Award (4 Applicants listed)

SILLERJACKSON, ARLENE J
Citizenship: United States
Adviser: Dr. Phillip D. Bowman
Research Field: 2990
Research Title: Determination of the Temporal Presence of Growth Factors in Healing and Nonhealing Bone Defects

Ph.D. Date: 2006
U of North Tex, Health Science Ct
Expected Starting Date: 5/01/07
Termination Date: 4/30/08

W- Withdrew after Review/Recommend

MUJER, CESAR V
Citizenship: United States
Adviser: Dr. M. S. Ibrahim
Research Field: A072
Research Title: Proteomic Analysis of Orthopoxvirus and Host Response Proteins and Development of Interfering RNA Therapeutics

Ph.D. Date: 1989
Ohio State University

U.S. Army Medical Research and Materiel Command

Curtis, Kristopher Michael **8/15/2003 10/06/2006**

1 Infection of non-human primates (NHP) with wild-type and infectious clone derived EBOV is indistinguishable.
2 EBOV glycoprotein editing site mutations are not well tolerated and revert to wild-type upon infection of NHP's.
3 EBOV glycoprotein clevage site mutations reveal that this site may not be an ideal target for antiviral strategies.

Dupuy, Lesley Conrad, Jr **5/02/2003 7/01/2006**

1 Individual DNA vaccines expressing the structural proteins of Venezuelan (VEEV), eastern (EEEV), and western (WEEV) equine encephalitis virus are immunogenic in mice following particle bombardment (gene gun) delivery.
2 he VEEV and WEEV DNA vaccines delivered in this manner confer protective immunity against homologous viral aerosol challenge in ~80% of vaccinated mice, while the EEEV DNA vaccine is not protective.
3 The immunogenicity and protective efficacy of these individual DNA vaccines is not significantly altered when they are delivered in combination by gene gun.
4 Cationic lipid and liquid jet injection are viable alternative s to the gene gun for delivery of the VEEV DNA vaccine, while delivery of this vaccine by transcutaneous chemical, microneedle injection, and skin dermabrasion is not as efficacious.
5 Certain encephalitic alphavirus envelope glycoprotein variants created by directed molecular evolution (gene shuffling) displayed increased cross-reactivity against VEEV, EEEV, and WEEV and offered complete protection against VEEV aerosol challenge.

Foley, Desmond Hector **2/17/2004 9/16/2006**

1 A molecular phylogeny of the Australasian Anopheles annulipes complex showed it was monophyletic, comprised a cool adapted southern clade and warm adapted northern clade, and is the most species-rich Anopheles complex, with over 17 sibling species
2 A novel Bayesian clustering approach, using the program STRUCTURE, was applied to allozyme data of the Anopheles annulipes complex to demonstrate its utility for detecting species-level genetic divergence, as well as population structure.
3 The WRBU's online Systematic Catalog revealed new findings about mosquito biogeography, such as a positive log-log species-area relationship, and that island nations are more species-rich and have higher endemicity than do mainland nations.
4 Analysis of a database of over 43,000 mosquito collection records and 492 species from the Neotropics revealed the location of hotspots in species-richness and endemicity and suggested areas where mosquito inventory needs are greatest.
5 Ecological Niche modelling of collection records revealed the potential distribution of malaria vectors in Korea and SE Asia. A website, www.mosquitomap.org is being developed to host global mosquito occurrence data and distribution maps.

Fritz, Elizabeth Ann **3/03/2003 9/02/2006**

1 Identified changes in the cellular immune response and identified viral targeted cell populations in Variola- infected nonhuman primates--first study known.
2 Identified and tested a successful alternate route of exposure for refinement of the Monkeypox nonhuman primate model.
3 Identified changes in the celluluar immune response in Marburg (Ci67)-infected nonhuman primates.
4 Identified through evaluation novel therapeutics for filovirus infection--studies are the basis for continuing testing in nonhuman primates.
5 Developed and refined cytotoxic T-cell assays for testing vaccines and therapeutics in nonhuman primates.

Goff, Arthur James **8/20/2004 10/31/2006**

1 We have engineered a cowpox virus expressing the green flourescent protein (eGFP) under control of vaccinia virus (VV) early/late promoter.
2 Using the above mentioned recombinant virus we tested a novel class of drugs for anti-cowbox activity in mice.
3 Also using the mouse model of cowpox virus infection, we developed a model for vaccinia-induced myocarditis.
4 We also engineered a GFP-expressing Monkeypox virus (MPX-eGFP) that was used in conjunction with whole body flourescence resonance imaging to develop a disease progression model for intravenous infection of Monkeypox in non-human primates.

U.S. Army Medical Research and Materiel Command

Hoard-Fruchey, Heidi Marie **7/19/2004 4/28/2006**

1 Stability of BoNT/A and /B recombinant light chains (rLC) was assessed in 7 solutions with greatest stability in intracellular buffer followed by 40 mM HEPES pH 7.3. Both were more stable in water than expected with half-lives of >1 week.
2 BoNTA/A rLC stability increases with increasing milkfat, but milkfat content did not affect BoNT/B rLC stability, suggesting lipids play a role in BoNT/A stability and factors contributing to stability may be serotype specific.
3 Compound 35 inhibits BoNT/A, /B, and /E LC activities, and is a potential broad range inhibitor of BoNT activity.
4 Two derivatives of compound 35 also inhibit BoNT/A and BoNT/B activity, suggesting that derivatives of compound 35 may be useful for treatment of BoNT intoxication.
5 In collaboration with CPT Angela Purcell, a capillary electrophoresis assay was developed for BoNT/A and /E activity.

Johnson, Erik Andrew **1/03/2005 1/02/2007**

1 Morris water maze (MVM) is not good behavioral model for repeated, low dose soman or sarin exposure.
2 Repeated, low dose exposures to soman do not lead to cytoskeletal or synaptic derangements nor does this exposure paradigm result in increased apoptsis in hippocampus or parietal cortex.
3 Repeated, low dose exposures to soman does lead to significant changes in glutamate receptor immunoreactivity though the ramifications of this are not fully known.
4 Characterized sixteen different antibodies for cross-species immunoreactivity in guinea pigs and wrote protocols to describe the process.
5 Acute exposure to soman reveals no significant changes in synaptic or certain cytoskeletal protein immunoreactivities though significant changes were observed in neruon and astrocyte-specific proteins.

Klas, Sheri Denet **12/06/2004 2/28/2006**

1 Identified two different HLA-A2 restricted CTL epitopes from Yersinia pestis
2 Discovered which human cell types can be infected by Yersinia pestis

Kremenevskiy, Igor **9/06/2005 9/01/2006**

1 We finished the model development phase. There were tested respiratory and metabolic acidosis models in pigs. It was confirmed some previously established procedures concerning anesthesia, catheters, and monitoring of hemodynamics.
2 Our experiments showed respiratory as well as metabolic acidosis induced the development of coagulopathy in the pigs. The restoartion of pH did not restore blood coagulation.
3 Adding rFVIIa to pig plasma in vitro in dose 1.26ug/ml final plasma concentration increased the maximal thrombin generation, however it did not completely correct coagulopathy.
4 It was studied the effects different fluid solutions (Hextend and Lactated Ringer) on coagulation function of normal and hypothermic human plasma in vitro with and without 90ug/kg rFVIIa (1.26ug/ml final plasma concentration).
5 We modified the thrombin generation test (developed by Hemker H.C. et al. 1993; 2003). this assay is suitable for detecting treatment-depending changes in the kinetic of thrombin generation and monitoring the pharmacokinetics of rfVIIa.

Langston, Jeffrey Lamar **5/12/2003 5/11/2006**

1 Repeated exposure to CWNA at doses that produce behavioral effects often also induces overt toxicity. Doses of CWNA that produce overt toxicity may produce behavioral alterations that persist months after exposure.
2 Guinea pigs are suitable subjects for evaluating of the behavioral effects of drugs and toxicants. Guinea pigs do not seem to perform well in tasks that require the animal to travel in open spaces (i.e., radial arm maze, open field).
3 Conducted dose-response study of GB with animals performing under progressive ratio schedule. Conducted dose-response study of VX with animals performing under progressive ratio schedule. Evaluated ability of animals to learn new task after VX.
4 Guinea pigs perform qualitatively similar to other rodent species on a variety of operant behavior tasks including: active avoidance, multiple schedules of reinforcement, simple schedules of reinforcement, delayed matching and discrimination.

U.S. Army Medical Research and Materiel Command

Miroshnikova, Olga Vyatcheslavovna **2/25/2003 2/24/2006**

1 Designed and synthesized novel anti-malarial drugs.
2 Conducted multiple-step synthesis of Michal accepter-based peptidomimetric inhibitors.
3 Improved existing methods of peptide synthesis to optimize product yield and selectivity.
4 Developed new approaches to overcome Mitsunobu reaction separation problem of the final product from by-product.
5 Investigated Structure-Activity Relationship of compounds obtained.

Pearson, Brooke **7/14/2003 10/13/2006**

1 We determined the extent of the antibody response to the three components of the anthrax toxin: PA, LF, and EF.
2 I have demonstrated that these antibodies are capable of blocking serum conversion of the full-length protective antigen (PA) to its active form.
3 These antibodies can also block the binding of full-length PA to the surface of cells.
4 I also demonstrated that the antibodies are able to block the clevage of PA after it is already bound to cells.
5 Additionally, we demonstrated that antisera inhabits the enzymatic activity of the LF toxin.

Silvestri, Lynn Shiels **9/07/2004 1/31/2006**

1 Effective siRNA against components of the Ebola and Marburg polymerase complexes (L, VP35, VP30, and NP) were identified.
2 siRNAs were evaluated by Western blot after transfection of cells with siRNA and expression vectors. Transfection of cells with siRNA in various combinations followed by virus infection was effective in reducing virus titters.
3 Transfection of siRNA into mice by hydrodynamic shear did not protect mice from death from Ebola virus infection.
4 The amount of siRNA used, the delivery method, and lack of siRNA chemical modification for in vivo delivery likely contributed to the mouse study results.

Tonduli, Laura Sabina **2/17/2004 12/15/2006**

1 We build up a reliable and reproducible ex vivo method that mimics the in vivo situation of a subject pretreated with cholinesterase reversible inhibitors and then exposed to organophosphate agents (OPS).
2 With this method, we determined for 5 pretreatments (pyridostigmine, physostigmine, huperzine, tacrine and galanthamine) with kinetics of inhibition and recovery of cholinesterases activities after various OPs esposures (MEPQ or DEPQ or soman).
3 We compared these inhibitors between them to determine which one seem to be the more efficient when used a pretreatment of a nerve agent intoxication.
4 We also determined the tissue distribution of exogenous human serum butyrylcholinesterase after intra muscular administration.

Urso, Maria Laina **7/10/2006 9/21/2006**

1 Refined Research proposal and learned additional laboratory techniques necessary to execute proposed experimental design.
2 Submitted a research proposal to the Scientific Review Committee to conduct a pilot experiment on pre-existing human samples. The purpose of this work is to explore the effects of muscle injury (due to resistance exercise) on protease activity.

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National Research Council

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Research Associateship Programs

FINAL REPORT

Print Layout View

Return this form directly to the NRC as an E-mail attachment, or print out and mail or fax.

1) *Associate Last or Family Name*	*First Name*	*M.I.*
Curtis	**Kristopher**	**M**

2) *FORWARDING Address* (to which your tax statement will be mailed)	*FORWARDING Phone(s) and E-Mail* (if known)
Res. or Inst. **Residential** Street **795 Eastern Avenue** City, State Zip **Augusta, ME 04330**	**Home Phone:** **Alt. Phone: 301-514-7749** **E-mail: kmccls@verizon.net**

3) *Today's Date*	*Dates of Tenure*
September 6, 2006	from **August 14, 2003** to **October 6, 2006**

4) *Agency*	*Laboratory or Center*	*Division / Directorate / Department*
AMRMC	**USAMRIID**	**Virology**

5) *Name of Laboratory NRC Adviser* (and USMA Mentor, if applicable)

Dr. Michael Parker

6) *TITLE OF RESEARCH PROPOSAL*

Utilization of an Ebola Virus Reverse Genetics System to Identify Critical Mechanisms in Disease Pathogenesis

7) *SUMMARY OF RESEARCH DURING TENURE* **Itemize significant findings in concise form, utilizing key concepts/words.**

1) **Infection of non-human primates (NHP) with wild-type and infectious clone derived EBOV is indistinguishable**

2) **EBOV glycoprotein editting site mutations are not well tolerated and revert to wild-type upon infection of NHPs**

3) **EBOV glycoprotein cleavage site mutations reveal that this site may not be an ideal target for antiviral strategies**

4)

5)

(USMA Davies Fellow: please add summary of teaching, including classes taught.)

8) *RESEARCH IN PROGRESS* **Describe in no more than 100 words.**

For the purposes of in vitro replication and in vivo pathogenesis studies, work was initiated towards the construction of EBOV encoding green fluorescent protein. Additionally, recombinant viruses encoding mutations in the immunosuppressive and mucin-like domains of the glycoprotein were planned to evaluate their role in viral pathogenesis. This work is in the early stages of development. A mucin-like domain mutant has been constructed, but has not yet been recovered from the infectious clone system, while strategies for generating the immunosuppressive domain mutant are ongoing.

9) *PUBLICATIONS AND PAPERS RESULTING FROM NATIONAL ACADEMIES ASSOCIATESHIP RESEARCH*

Provide complete citations: author(s), title, full name of journal, volume number, page number(s), and year of publication.

a) **Publications in peer-reviewed journals**

b) **Books, book chapters, other publications**

c) **Manuscripts in preparation, manuscripts submitted**

Elizabeth A. Fritz, Lisa E. Hensley, David Kulesh, Kristopher Curtis,Tom Geisbert, Peter B. Jahrling, Jason Paragas. detection of the L polymerase gene by one-step real-time PCR—a novel diagnostic method for Ebola-Zaire infection. Manuscript in preparation.

Zhongyu Zhu1, Samitabh Chakrabortil, Xiaodong Xiao, Yuxian He, Ponraj Prabakaran, Igor A. Sidorov, Lisa E Hensley, Yang Feng1, Kristopher M Curtis, Shibo Jiang, and Dimiter S. Dimitrov. Potent Neutralization of SARS Coronavirus Isolates by a Cross-Reactive Human Monoclonal Antibody. Manuscript in preparation for submission to PNAS

10) *PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM NATIONAL ACADEMIES ASSOCIATESHIP RESEARCH*

Provide titles, inventors, and dates of applications.

11) *PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES*

Provide complete references: author(s), title, abstract/proceeding citation, meeting name and location.

International

Domestic

Geisbert TW, Hensley LE, Curtis KM, Geisbert JB, Lee M, Palmer L, Jeffs L, MacLachlan I. Development of an siRNA Based Therapy for Ebola Virus Infection. 8th Annual Meeting of the American Society of Gene Therapy, St. Louis, MO, June 1-5, 2005.

12) *SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES* **Include dates, names and locations of seminars.**

13) *PROFESSIONAL AWARDS RECEIVED DURING TENURE*

14) *POST-TENURE POSITION TITLE*

Research Scientist I

15) *POST-TENURE ORGANIZATION* **Provide name and address of organization.**

IDEXX, One IDEXX Dr., Westbrook ME 04092

16) *POST-TENURE POSITION STATUS / CATEGORY* **Please indicate only one.**

- ☐ Remain at Host Agency as Permanent Employee
- ☐ Remain at Host Agency as Contract/Temporary Employee
  Abbreviate Host Laboratory/Center _____
- ☐ Research Position at Another US Government Laboratory
- ☐ Administrative Position at US Government Laboratory
- ☐ Research Position at Foreign Government Laboratory
- ☐ Research/Teaching at US College/University
- ☐ Research/Teaching at Foreign College/University
- ☒ Research/Administration in Industry
- ☐ Research/Administration in Non-Profit Organization
- ☐ Postdoctoral Research
- ☐ Self Employed
- ☐ Other: **specify** _____

17) *APPRAISAL OF RESEARCH ASSOCIATESHIP PROGRAM*
On a scale of 1 – 10 (poor - excellent), please rate the following:

SHORT TERM VALUE

7 Development of knowledge, skills, and research productivity

Comments

The NRC program provides a great opportunity for post-doctoral research. I feel as though I was given an ppportunity to work in a unique environment.

LONG TERM VALUE

7 How the National Academies Associateship award affected your career to date

Comments

LAB SUPPORT

5 Quality of support--equipment, funding, orientation, safety and health guidelines, etc.

Comments

The environment at USAMRIID, and my lab in particular, was not very conducive for post-doctoral research. However, this has little to do with the NRC program itself. There is a total lack of communication and collaboration within USAMRIID, both between laboratories and with the NRC itself. This often leads to a feeling of isolation.

ADVISER/MENTOR SUPPORT

3 Quality of mentoring from the Lab NRC Adviser (USMA Mentor, if applicable)

Comments

This rating is specific to Dr. Tom Geisbert, as he gave very limited mentorship during my NRC tenure at USAMRIID. I have recently learned that Dr. Geisbert received his Ph.D. the same year I received mine (2003), and I believe this explains his defficiencies with respect to mentorship. His lack of experience supervising personel and serving as a mentor has really put the post-docs in his lab at a disadvantage.

I would rate Mike Parker, who recently became my advisor, as an 8.

LPR SUPPORT

☐ Quality administrative support from the LPR

Comments

NRC SUPPORT

10 Quality of administrative support from the NRC

Comments

18) *PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT.*

I would agree that it is the job of NRC associates to screen prospective mentors and choose a mentor wisely, but I think some sctrutinizing of potential NRC advisors by the NRC would help prevent negative experiences.

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Research Associateship Programs

FINAL REPORT

Print Layout View

Return this form directly to the National Academies as an E-mail attachment, or print out and mail or fax.

1) *Associate Last or Family Name*	*First Name*	*M.I.*
Dupuy, Jr.	**Lesley**	**C.**

2) *FORWARDING Address* (to which your tax statement will be mailed)	*FORWARDING Phone(s) and E-Mail* (if known)
Res. or Inst. **Res.** Street **902 Gatepost Lane #3C** City, State Zip **Frederick, MD 21701**	**Home Phone: 301-305-6863** **Alt. Phone: 301-619-4109** **E-mail: lesley.dupuy@amedd.army.mil**

3) *Today's Date*	*Dates of Tenure*
June 26, 2006	from **May 2, 2003** to **June 30, 2006**

4) *Agency*	*Laboratory or NASA Center*	*Division / Branch / Directorate*
AMRMC	**AMRIID**	**Virology**

5) *Name of Research Associateship Programs Adviser*

Connie S. Schmaljohn

6) *TITLE OF RESEARCH PROPOSAL*

Evaluation Of Multivalent DNAVaccine Strategies For Encephalitic Alphavirus Immunization

7) *SUMMARY OF RESEARCH DURING TENURE* **Itemize significant findings in concise form, utilizing key concepts/words.**

1) Individual DNA vaccines expressing the structural proteins of Venezuelan (VEEV), eastern (EEEV), and western (WEEV) equine encephalitis virus are immunogenic in mice following particle bombardment (gene gun) delivery.

2) The VEEV and WEEV DNA vaccines delivered in this manner confer protective immunity against homologous viral aerosol challenge in ~80% of vaccinated mice, while the EEEV DNA vaccine is not protective.

3) The immunogenicity and protective efficacy of these individual DNA vaccines is not significantly altered when they are delivered in combination by gene gun.

4) Cationic lipid and liquid jet injection are viable alternative s to the gene gun for delivery of the VEEV DNA vaccine, while delivery of this vaccine by transcutaneous chemical, microneedle injection, and skin dermabrasion is not as efficacious.

5) Certain encephalitic alphavirus envelope glycoprotein variants created by directed molecular evolution (gene shuffling) displayed increased cross-reactivity against VEEV, EEEV, and WEEV and offered complete protection against VEEV aerosol challenge.

8) *RESEARCH IN PROGRESS* **Describe in no more than 100 words.**

Several research projects have been started during my tenure as an NRC Associate which will be continued as I transition into an investigator role at my host institution. These include continued evaluation of the immunogenicity and protective efficacy of individual and combined DNA vaccines for VEEV, EEEV, and WEEV in mouse and nonhuman primate models of infection; continued evaluation of different delivery mechanisms for VEEV, EEEV, and WEEV DNA vaccines including cationic lipid, electroporation, and liquid jet injection delivery; and, evaluation of gene-shuffled EEEV and WEEV envelope glycoprotein variants for improved cross-reactivity, immunogenicity, and protective efficacy.

9) *PUBLICATIONS AND PAPERS RESULTING FROM NATIONAL ACADEMIES ASSOCIATESHIP RESEARCH*

Provide complete citations: author(s), title, full name of journal, volume number, page number(s), and year of publication.

a) Publications in peer-reviewed journals

b) Books, book chapters, other publications

c) Manuscripts in preparation, manuscripts submitted

Dupuy, L.C., Paidhungat, M., Richards, M., Lind, C., Bakken, R., Whalen, R.G., Locher, C.P., and Schmaljohn, C.S. (2006) Improvement of the Immunogenicity and Protective Efficacy of DNA Vaccines Expressing the Venezuelan Equine Encephalitis Virus Envelope Antigens by using Directed Molecular Evolution. In preparation.

Dupuy, L.C., Paidhungat, M., Richards, M., Lind, C., Bakken, R., Whalen, R.G., Locher, C.P., and Schmaljohn, C.S. (2006) Comparison of Individual, Combination, and Gene-shuffled Chimeric DNA Vaccines for Venezuelan, Eastern, and Western Equine Encephalitis Viruses in Mice. In preparation.

Dupuy, L.C., Richards, M., Lind, C., Bakken, R., Whalen, R.G., Locher, C.P., and Schmaljohn, C.S. (2006) DNA Prime and Recombinant E2 Envelope Protein Fragment Boost Strategy Enhances the Immunogenicity and Protective Efficacy of an Eastern Equine Encephalitis DNA Vaccine in Mice. In preparation.

Dupuy, L.C., Paidhungat, M., Richards, M., Lohre, J.A., Kuznetsova, M.A., Silvera, P., Draghia, R., Whalen, R.G., Locher, C.P., and Schmaljohn, C.S. (2006) Characterization of the Immune Responses Induced by Electroporation of Wild-type and Gene-shuffled Chimeric DNA Vaccines Expressing the Venezuelan Equine Encephalitis Envelope Antigens in Cynomolgus Macaques. In preparation.

Dupuy, L.C., Spik, K., Badger, C., Richards, M., Bakken, R., Morrow, J., Rusalov, D., Ferrari, M., and Schmaljohn, C.S. (2006) Vaxfectin Cationic Lipid-mediated Delivery of Individual and Combined DNA Vaccines Expressing Antigens from Venezuelan Equine Encephalitis Virus, Rift Valley Fever Virus, and Ebola Virus. In preparation.

10) *PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM NATIONAL ACADEMIES ASSOCIATESHIP RESEARCH*
Provide titles, inventors, and dates of applications.

11) *PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES*
Provide complete references: author(s), title, abstract/proceeding citation, meeting name and location.

International

L. Dupuy, M. Paidhungat, M. House, R.G. Whalen, C.P. Locher, and C. Schmaljohn. (2004) Evaluation of Strategies for Developing a Multivalent DNA Vaccine for Encephalitic Alphaviruses. DNA Vaccines 2004: The Gene Vaccine Conference, Monte Carlo, Monaco.

Domestic

L. Dupuy, M. Richards, M. Paidhungat, J.A. Lohre, M.A. Kuznetsova, P. Silvera, R. Draghia, R.G. Whalen, C.P. Locher, and C. Schmaljohn. (2005). Improvement in DNA Vaccines for Venezuelan Equine Encephalitis Virus by using Directed Molecular Evolution. 2005 Scientific Conference on Chemical & Biological Defense Research, Timonium, MD.

L.C. Dupuy, M. Paidhungat, M. Richards, R.G. Whalen, C.P. Locher, and C.S. Schmaljohn. (2005) Towards the Development of a Multivalent DNA Vaccine for Encephalitic Alphaviruses. XIII International Congress of Virology, San Francisco, CA.

L. Dupuy, M. Paidhungat, M. House, C. Schmaljohn, R.G. Whalen, and C.P. Locher. (2004) Development of a Novel Encephalitic Alphavirus Vaccine using DNA Shuffling and Screening Strategies. 53rd Annual Meeting of the American Society of Tropical Medicine and Hygiene, Miami, FL.

L. Dupuy, M. Paidhungat, J. Lohre, V. Heinrichs, M. House, C. Schmaljohn, R.G. Whalen, and C.P. Locher. (2004) Increased Immunogenicity and Neutralizing Antibodies to Alphaviruses using Genetic Vaccination with a DNA Vaccine Containing a Constitutive Transport Element. 53rd Annual Meeting of the American Society of Tropical Medicine and Hygiene, Miami, FL.

12) *SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES* **Include dates, names and locations of seminars.**

13) *PROFESSIONAL AWARDS RECEIVED DURING TENURE*

14) *POST-TENURE POSITION TITLE*

Principal Investigator

15) *POST-TENURE 0RGANIZATION* **Provide name and address of organization.**

U.S. Army Medical Research Institute of Infectious Diseases
Virology Division
1425 Porter Street
Fort Detrick, MD 21702

16) *POST-TENURE POSITION STATUS / CATEGORY* **Please indicate only one.**

- ☐ Remain at Host Agency as Permanent Employee
- ☒ Remain at Host Agency as Contract/Temporary Employee
  Abbreviate Host Laboratory/Center **AMRIID**
- ☐ Research Position at Another US Government Laboratory
- ☐ Administrative Position at US Government Laboratory
- ☐ Research Position at Foreign Government Laboratory
- ☐ Research/Teaching at US College/University
- ☐ Research/Teaching at Foreign College/University
- ☐ Research/Administration in Industry
- ☐ Research/Administration in Non-Profit Organization
- ☐ Postdoctoral Research
- ☐ Self Employed
- ☐ Other: **specify** _____

17) *APPRAISAL OF RESEARCH ASSOCIATESHIP PROGRAM*
On a scale of 1 – 10 (poor - excellent), please rate the following:

SHORT TERM VALUE

9 Development of knowledge, skills, and research productivity

Comments

My NRC Research Associateship at AMRIID provided me with an excellent opportunity to expand my knowledge and research skills into the area of vaccine development for highly pathogenic viruses with a focus on DNA vaccines. It also allowed me to improve my project management ability as I coordinated multiple research projects and was responsible for interaction with collaborating partners from industry.

LONG TERM VALUE

9 How the National Academies Associateship award affected your career to date

Comments

This award provided me with the opportunity to perform research in a top-notch government laboratory setting and has helped to steer my career in the direction of government research. I will continue to pursue research as an investigator at my host institution following completion of my associateship.

LAB SUPPORT

9 Quality of support--equipment, funding, orientation, safety and health guidelines, etc.

Comments

There was no lack of equipment or funding support during my tenure at my host institution and laboratory. I was provided with the opportunity to learn to safely perform research on highly pathogenic viruses requiring high level biosafety containment.

ADVISER SUPPORT

9 Quality of mentoring from the Adviser

Comments

My advisor was fully supportive of my research endeavors during my associateship. She provided me with the proper level of expert guidance while allowing me adequate room to pursue the research to the fullest levels of my ability without unnecessary restriction.

LPR SUPPORT

9 Quality administrative support from the LPR

Comments

The LPR was fully supportive of my research during my associateship. He provided me with the administrative support necessary for seamless integration into my host institution during my tenure.

NRC SUPPORT

9 Quality of administrative support from the NRC

Comments

The NRC provided excellent support during my tenure and was always very helpful in assisting me in all administrative matters related to my associateship.

18) *PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT.*

I feel that the NRC Research Associateship Program represents one of the best, if not the very best, postdoctoral research programs available. Therefore, I have no obvious suggestions for program improvement.

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Research Associateship Programs

FINAL REPORT

Return this form directly to the National Academies as an E-mail attachment, or print out and mail or fax.

1) *Associate Last or Family Name*	*First Name*	*M.I.*
Emerson	**Ginny**	**L**

2) *FORWARDING Address* (for tax statement / final stipend check)	*FORWARDING Phone(s) and E-Mail* (if known)
2910 Clairmont Rd. Apt 2325, Atlanta GA 30329	**Home phone: (202) 421-3380** **Alt. phone:** **E-mail: ginny.emerson@alumni.gwu.edu**
3) *Today's Date* **April 12, 2006**	*Dates of Tenure* **from March 1, 2004 to April 14, 2006**

4) *Agency*	*Laboratory or NASA Center*	*Division / Branch / Directorate*
AMRMC	**USAMRIID**	**Virology / Integrated Toxicology**

5) *NAME OF RESEARCH ADVISER*
Sofi Ibrahim / Robert Ulrich

6) *TITLE OF RESEARCH PROPOSAL*

Poxvirus genomics

7) *SUMMARY OF RESEARCH DURING TENURE* **Itemize significant findings in concise form, utilizing key concepts/words.**

1)
2)
3)
4)
5)

8) *RESEARCH IN PROGRESS* **Describe in no more than 100 words.**

My current work with Dr. Ulrich involves the use of whole proteome microarray chips of poxviruses to profile humoral responses to vaccines. Identifing viral antigens commonly recognized by antibodies of vaccinated individuals is an important step toward understanding of the humoral immune response to disease. This can be achieved by visualizing serum antibodies bound to viral antigens on a chip. Once defined, these proteins may act as correlates of immunity in testing new vaccines and provide new targets for vaccine development.

9) *PUBLICATIONS AND PAPERS RESULTING FROM THE NATIONAL ACADEMIES ASSOCIATESHIP RESEARCH*
Provide complete citations: author(s), title, full name of journal, volume number, page number(s), and year of publication.

a) Publications in peer-reviewed journals

None

b) **Books, book chapters, other publications**

None

c) **Manuscripts in preparation, manuscripts submitted**

I am currently involved in preparing a manuscript with Dr. Robert Ulrich and others regarding serum antibody profiling of human smallpox vaccinees using a whole proteome chip of vaccinia virus.

10 *PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM THE NATIONAL ACADEMIES ASSOCIATESHIP RESEARCH*

Provide titles, inventors, and dates of applications.

None

11) *PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES*

Provide complete references: author(s), title, abstract/proceeding citation, meeting name and location.

International

None

Domestic

We will be presenting a poster on the above mentioned work (manuscripts in prep) at the upcoming research festival held here at Ft. Detrick.

12) *SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES* **Include dates, names and locations of seminars.**

None

13) *PROFESSIONAL AWARDS RECEIVED DURING TENURE*

None

14) *POST-TENURE POSITION TITLE*

Biologist/ Ecologist

15) *POST-TENURE ORGANIZATION* **Provide name and city of organization.**

Centers for Disease Control and Prevention, Atlanta GA

16) *POST-TENURE POSITION STATUS / CATEGORY* **Please indicate only one.**

- [ ] Remain at Host Agency as Permanent Employee
- [ ] Remain at Host Agency as Contract/Temporary Employee

Abbreviate Host Laboratory/Center_____

- [x] Research Position at Another US Government Laboratory
- [ ] Administrative Position at US Government Laboratory
- [ ] Research Position at Foreign Government Laboratory
- [ ] Research/Teaching at US College/University
- [ ] Research/Teaching at Foreign College/University
- [ ] Research/Administration in Industry
- [ ] Research/Admin in Non-Profit Organization
- [ ] Postdoctoral Research
- [ ] Self Employed
- [ ] Other: specify _____

17) *APPRAISAL OF RESEARCH ASSOCIATESHIP PROGRAM*
On a scale of 1 – 10 (poor - excellent), please rate the following:

SHORT TERM VALUE

7.00 Development of knowledge, skills, and research productivity
Comments

I basically lost 23 months of productivity with my first adviser. Fortunately, I learned alot on my own and the 10 weeks with Dr. Ulrich have been pleasantly productive.

LONG TERM VALUE

8 How the National Academies Associateship award affected your career to date
Comments

I think the award itself is a an asset to my career, as well as the experience with Dr. Ulrich.

LAB SUPPORT

9 Quality of support--equipment, funding, orientation, safety and health guidelines, etc.
Comments

My initial situation was a bit of a travesty, but my current environment is very good (leading edge, forward thinking, enthusiastic about incorporating new technology and new techniques).

ADVISER SUPPORT

9 Quality of mentoring from the Adviser
Comments

Mentoring from my first adviser was deplorable, however Dr. Ulrich has been outstanding.

LPR SUPPORT

8 Quality administrative support from the LPR
Comments

The LPR found a new adviser for me to work with (quite singlehandedly) and I am very grateful, however I am disappointed that more was not done to protect future associates from ending up in the same situation.

NRC SUPPORT

10 Quality of administrative support from the NRC
Comments

The administrative staff has always been very helpful, courteous and supportive.

18) *PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT.*

Perhaps enhanced screening of advisers would ensure a better experience for future associates. Unfortunately, local politics outside the purview of the NRC undoubtedly play a role in sustaining the tenure of certain individuals.

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Research Associateship Programs

FINAL REPORT

Print Layout View

Return this form directly to the National Academies as an E-mail attachment, or print out and mail or fax.

1) *Associate Last or Family Name*	*First Name*	*M.I.*
Foley	**Desmond**	**H**

2) *FORWARDING Address* (to which your tax statement will be mailed)

Res. or Inst. **Res.**
Street **5 Cougar St**
City, State Zip **Indooroopilly, Qld 4068 Australia**

FORWARDING Phone(s) and E-Mail (if known)
Home Phone:
Alt. Phone: +61 2 66 543476
E-mail: notoscriptus@yahoo.com.au

3) *Today's Date*: **September 28, 2006**

Dates of Tenure: from **February 16, 2004** to **September 16, 2006**

4) *Agency*	*Laboratory or NASA Center*	*Division / Branch / Directorate*
AMRMC	**WRAIR**	

5) *Name of Research Associateship Programs Adviser*

Dr Richard C. Wilkerson

6) *TITLE OF RESEARCH PROPOSAL*

Systematics of the Anopheles annulipes complex of mosquitoes

7) *SUMMARY OF RESEARCH DURING TENURE* **Itemize significant findings in concise form, utilizing key concepts/words.**

1) A molecular phylogeny of the Australasian Anopheles annulipes complex showed it was monophyletic, comprised a cool adapted southern clade and warm adapted northern clade, and is the most species-rich Anopheles complex, with over 17 sibling species

2) A novel Bayesian clustering approach, using the program STRUCTURE, was applied to allozyme data of the Anopheles annulipes complex to demonstrate its utility for detecting species-level genetic divergence, as well as population structure.

3) The WRBU's online Systematic Catalog revealed new findings about mosquito biogeography, such as a positive log-log species-area relationship, and that island nations are more species-rich and have higher endemicity than do mainland nations.

4) Analysis of a database of over 43,000 mosquito collection records and 492 species from the Neotropics revealed the location of hotspots in species-richness and endemicity and suggested areas where mosquito inventory needs are greatest.

5) Ecological Niche modelling of collection records revealed the potential distribution of malaria vectors in Korea and SE Asia. A website, www.mosquitomap.org is being developed to host global mosquito occurrence data and distribution maps.

8) *RESEARCH IN PROGRESS* **Describe in no more than 100 words.**

Continuation of Ecological Niche modelling of collection records from Korea, SE Asia and Costa Rica. Continued development of www.mosquitomap.org to include collection data from Australasia and Africa. Extension of Lucid computer key of Queensland mosquitoes to encompass mosquitoes of Australia.

9) *PUBLICATIONS AND PAPERS RESULTING FROM NATIONAL ACADEMIES ASSOCIATESHIP RESEARCH*
Provide complete citations: author(s), title, full name of journal, volume number, page number(s), and year of publication.

a) **Publications in peer-reviewed journals**

Foley, D.H, Bryan, J.H. & Wilkerson, R.C. (in press). Species-richness of the Anopheles annulipes complex (Diptera: Culicidae) revealed by tree and model-based allozyme clustering analyses. Biol. J. Linn. Soc.
Foley, D.H., Wilkerson, R.C., Cooper, R.D. & Bryan, J.H (in press). A molecular phylogeny of Anopheles annulipes (Diptera: Culicidae) sensu lato; the most species-rich anopheline complex. Mol. Phyl. & Evol.

b) **Books, book chapters, other publications**

c) **Manuscripts in preparation, manuscripts submitted**

Boyd, A-M. & Foley, D.H. (submitted). Distribution of sibling species of the Anopheles annulipes complex (Diptera: Culicidae) in the Townsville region of Australia. J. Aust. Entomol. Soc.
Foley, D.H. & Wilkerson, R.C. (in prep.). Visualizing potential barriers to gene flow via digital genetic landscapes.

Rueda, L.P., Foley, D.H., Peterson, T. and Wilkerson, R.C. (in prep.). Geographic and Ecological distribution of the malaria vector, Anopheles sinensis.
Foley, D.H., Rueda, L.M. and Wilkerson, R.C. (in prep.). Insights into mosquito global biogeography from country species records.
Foley, D.H., Wietzman, A., Miller, S., Faran, M.E., Rueda, L.M. and Wilkerson, R.C. (in prep.). Towards a worldwide spatial database of mosquito species occurrence records: mosquitoes of the Neotropics.
Foley, D.H. (in prep.). Species delimitation by Bayesian clustering of individual genotype data.
Foley, D.H., Rueda, L.M., Peterson, A.T. and Wilkerson, R.C. (in prep). Potential distribution of four Southeast Asian malaria vectors according to Ecological Niche Modelling.

10) *PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM NATIONAL ACADEMIES ASSOCIATESHIP RESEARCH*
Provide titles, inventors, and dates of applications.

11) *PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES*
Provide complete references: author(s), title, abstract/proceeding citation, meeting name and location.

International

Foley, D.H. & Torres, E.P. (2005). Population structure of an island malaria vector. European Molecular Biology Organization, Mosquito workshop. 25-30 July, Kolymbari, Crete, Greece.
Torres, E.P., Foley, D.H., Kemp, D., Fischer, K. Pinto, J. & Bryan, J. (2005). Population genetic structure of the Philippine malaria vector, Anopheles flavirostris. European Molecular Biology Organization, Mosquito workshop. 25-30 July, Kolymbari, Crete, Greece.

Domestic

Foley, D.H. (2004). Systematics and Malaria vector identification: what is "appropriate technology"? 22-26 Feb, American Mosquito Control Association Conference. Savannah GA.
Rueda, L.P., Foley, D.H., Peterson, T. and Wilkerson, R.C. (2005). Geographic and Ecologic distribution of the malaria vector, Anopheles sinensis in Korea and other parts of Asia. American Society of Tropical Medicine & Hygiene 54th annual meeting. Dec 11-15, Washington DC. Am. J. Trop. Med. & Hyg. 73(6) (Suppl): 327.
Foley, D.H. and Wilkerson, R. (2005). The species-rich Anopheles annulipes complex. American Society of Tropical Medicine & Hygiene 54th annual meeting. Dec 11-15, Washington DC. Am. J. Trop. Med. & Hyg. 73(6) (Suppl): 327.

12) *SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES* Include dates, names and locations of seminars.

Foley, D.H. and Wilkerson, R. (2004). Mapping and predicting distributions of mosquito disease vectors. 176th AFPMB Meeting, 14 July, Walter Reed Army Institute of Research, Silver Springs MD.
Foley, D.H. (2004). Visualizing barriers to gene flow in genetic landscapes. 13 July, Systematic Biology & Molecular Genetics Lab, National Museum of Natural History, Smithsonian Institution, Washington DC
Foley, D.H. (2005). Know the vector distribution, know the disease threat. Global Emerging Infectious Diseases Surveillance colloqium on Distribution modelling of disease vectors. 20 September. Walter Reed Army Institute of Research, Silver Springs MD.
Foley, D.H. (2005). The curious case of the ant and the mosquito and other tales of culicid complexity. 1 December. Washington Entomological Society, Washington DC
Foley, D.H. (2006). NRC Research Associateship report. 20 April. Walter Reed Army Institute of Research, Silver Springs MD.
Foley, D.H. (2006). The potential of collection data to map the distribution of mosquitoes. 1 August. Armed Forces Pest Management Board, Silver Springs MD.
Foley, D.H. (2006). GIS and mosquitoes: from gene flow to biogeography. 22 August. USDA Flies affecting Man Laboratories, Gainesville, Fl.

13) *PROFESSIONAL AWARDS RECEIVED DURING TENURE*

Foley DH (2006). Mosquito Marauders of the Ant World. National Geographic Society Exploration Grant. $16244

14) *POST-TENURE POSITION TITLE*

Research Associate

15) *POST-TENURE ORGANIZATION* Provide name and address of organization.

National Museum of Natural History,
Smithsonian Institution

10th & Constitution Avenue NW
Washington DC 20560

16) *POST-TENURE POSITION STATUS / CATEGORY* **Please indicate only one.**

- ☐ Remain at Host Agency as Permanent Employee
- ☐ Remain at Host Agency as Contract/Temporary Employee
  Abbreviate Host Laboratory/Center _____
- ☐ Research Position at Another US Government Laboratory
- ☐ Administrative Position at US Government Laboratory
- ☐ Research Position at Foreign Government Laboratory
- ☐ Research/Teaching at US College/University
- ☐ Research/Teaching at Foreign College/University
- ☐ Research/Administration in Industry
- ☐ Research/Administration in Non-Profit Organization
- ☐ Postdoctoral Research
- ☒ Self Employed
- ☐ Other: **specify** _____

17) *APPRAISAL OF RESEARCH ASSOCIATESHIP PROGRAM*
On a scale of 1 – 10 (poor - excellent), please rate the following:

SHORT TERM VALUE

8 Development of knowledge, skills, and research productivity
Comments

LONG TERM VALUE

6 How the National Academies Associateship award affected your career to date
Comments

LAB SUPPORT

8 Quality of support--equipment, funding, orientation, safety and health guidelines, etc.
Comments

ADVISER SUPPORT

9 Quality of mentoring from the Adviser
Comments

LPR SUPPORT

8 Quality administrative support from the LPR
Comments

NRC SUPPORT

8 Quality of administrative support from the NRC
Comments

18) *PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT.*

Perhaps the NRC website could add something along the lines of: "Tips and advice from previous NRCs" (with a disclaimer)?

Fiscal PA Dap

THE NATIONAL ACADEMIES
Advisers to the Nation on Science, Engineering, and Medicine

Research Associateship Programs

FINAL REPORT

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Return this form directly to the National Academies as an E-mail attachment, or print out and mail or fax.

1) *Associate Last or Family Name*	*First Name*	*M.I.*
Fritz	**Elizabeth**	**A**

2) *FORWARDING Address* (to which your tax statement will be mailed)	*FORWARDING Phone(s) and E-Mail* (if known)
Res. or Inst. **Elizabeth Fritz** Street **34170 Ahalt Drive** City, State Zip **Bluemont, VA 20135**	**Home Phone: 304-724-7997** **Alt. Phone: 703-999-2726** **E-mail: lizfritz4@yahoo.com**

3) *Today's Date*	*Dates of Tenure*
September 18, 2006	from **March 3, 2003** to **September 2, 2006**

4) *Agency*	*Laboratory or Center*	*Division / Branch / Directorate*
AMRMC	**USAMRIID**	**Virology**

5) *Name of Research Associateship Programs Adviser*

Lisa E. Hensley

6) *TITLE OF RESEARCH PROPOSAL*

Modulation of the immune response during smallpox and monkeypox infections

7) *SUMMARY OF RESEARCH DURING TENURE* **Itemize significant findings in concise form, utilizing key concepts/words.**

1) Identified changes in the cellular immune response and identified viral targeted cell populations in Variola- infected nonhuman primates--first study known.

2) Identified and tested a successful alternate route of exposure for refinement of the Monkeypox nonhuman primate model.

3) Identified changes in the celluluar immune response in Marburg (Ci67)-infected nonhuman primates.

4) Identified through evaluation novel therapeutics for filovirus infection--studies are the basis for continuing testing in nonhuman primates.

5) Developed and refined cytotoxic T-cell assays for testing vaccines and therapeutics in nonhuman primates.

8) *RESEARCH IN PROGRESS* **Describe in no more than 100 words.**

1. Further refinement of alterante routes of exposure for the Monkepox nonhuman primate model.
2. Continuation of evaluating the changes in immune cell populations and host cytokine/chemokine profiles in response to orthopoxvirus infection.

9) *PUBLICATIONS AND PAPERS RESULTING FROM NATIONAL ACADEMIES ASSOCIATESHIP RESEARCH*

Provide complete citations: author(s), title, full name of journal, volume number, page number(s), and year of publication.

a) Publications in peer-reviewed journals

Yount B., Curtis K.M., Fritz E.A., Hensley L.E., Jahrling P.B., Prentice E., Denison M.R., Geisbert T.W., Baric R.S. Reverse Genetics with a Full-Lengh Infectious cDNA of Severe Acute Respiratory Syndrome Coronavirus. Proceedings of the National Academy of Sciences. October 2003; 100(22):12995-13000.

Hensley L.E., Fritz E.A., Jahrling P.B., Karp C., Huggins J.W., Geisbert T.W. Interferon-beta 1a Potently Inhibits SARS Coronavirus Replication in Vero E-6 Cells. Emerging Infectious Diseases. February 2004; 10(2):317-319.

Jones S.M., Feldmann H., Ströher U., Geisbert J.B., Fernando L., Grolla A., Klenk H.-D., Sullivan N.J., Volchkov V.E., Fritz E.A., Daddario K.M., Hensley L.E., Jahrling P.B., Geisbert T.W. Live attenuated recombinant vaccine protects non-human primates against Ebola and Marburg viruses. Nature Medicine. July 2005; 11(7):786-90.

Geisbert T.W., Jones S., Fritz E.A., Shurtleff A.C., Geisbert J.B., Liebscher R., Grolla A., Ströher U., Fernando L., Daddario K.M., Guttieri M.C., Mothé B.R., Larsen T., Hensley L.E., Jahrling P.B., Feldmann H. Development of a new vaccine for the prevention of Lassa fever. PLOS Medicine. June 2005; 2(6):e183.

Lawler J.V., Endy T.P., Hensley L.E., Garrison A., Fritz E.A., Lesar M., Baric R., Kulesh D., Norwood D., Wasieloski L., Ulrich M., Slezak T., Vitalis E., Huggins J., Jahrling P.B., Paragas J. Cynomologus macaque as an animal model for severe acute respiratory syndrome. PLoS Medicine. May 2006; 3(5):e149.

Daddario-DiCaprio KM, Geisbert TW, Stroher U, Geisbert JB, Grolla A, Fritz EA, Fernando L, Kagan E, Jahrling PB, Hensley LE, Jones SM, Feldmann H. Postexposure protection against Marburg haemorrhagic fever with recombinant vesicular stomatitis virus vectors in non-human primates: an efficacy assessment. Lancet. 2006 Apr 29;367(9520):1399-404.

Geisbert TW, Hensley LE, Kagan E, Yu EZ, Geisbert JB, Daddario-DiCaprio K, Fritz EA, Jahrling PB, McClintock K, Phelps JR, Lee AC, Judge A, Jeffs LB, MacLachlan I. Postexposure protection of guinea pigs against a lethal ebola virus challenge is conferred by RNA interference. J Infect Dis. 2006 Jun 15;193(12):1650-7.

Daddario-Dicaprio KM, Geisbert TW, Geisbert JB, Stroher U, Hensley LE, Grolla A, Fritz EA, Feldmann F, Feldmann H, Jones SM. Cross-Protection against Marburg Virus Strains by Using a Live, Attenuated Recombinant Vaccine. J Virol. 2006 Oct;80(19):9659-66.

b) Books, book chapters, other publications

P.B. Jahrling, Fritz E.A., Hensley L.E. Countermeasures to the Bioterrorist Threat of Smallpox. Current Molecular Medicine. Invited Review. Current Molecular Medicine. 2005; 5:817-826.

c) Manuscripts in preparation, manuscripts submitted

Fritz E.A., Reed D., Daddario K.M., Geisbert J.B., Larsen T., Jahrling P.B., Geisbert T.W. Hensley L.E,. Flow Cytometric Analysis of Marburg Virus Pathogenesis in Nonhuman Primates. Manuscript in preparation.

Fritz E.A., Rubins K.A., Fisher R.F., Raymond J., Larsen T., Huggins J., LeDuc J., Jahrling P.B., Hensley L.E. Identification of changing cell populations and virus-targeted cell populations during smallpox pathogenesis in nonhuman primates. Manuscript in preparation.

10) *PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM NATIONAL ACADEMIES ASSOCIATESHIP RESEARCH*
Provide titles, inventors, and dates of applications.

11) *PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES*
Provide complete references: author(s), title, abstract/proceeding citation, meeting name and location.

International

L.E. Hensley, H.A. Young, J. Paragas, T. Larsen, D. Reed, R. Fisher, E.A. Fritz, J. Geisbert, C.L. Karp, P.B. Jahrling, and T.W. Geisbert. Pathogenesis of Ebola Hemorrhagic Fever: the Impact of Viral Infection of Dendritic Cells and Other Antigen Presenting Cells. XII International Conference on Negative Strand Viruses. June 2003, Pisa, Italy; Paper No. 215.

E.A. Fritz, L.E. Hensley, M. Martinez, K. Rubins, J. Huggins, P.B. Jahrling. Pathogenesis of Orthopoxvirus Infection. XVth International Poxvirus and Iridovirus Conference. September 2004, Oxford, England; Paper No. 83.

K. Rubins, L.E. Hensley, E.A. Fritz, J. Huggins, J. LeDuc, P.B. Jahrling, P. Brown. Comparative Analysis of Host and Viral Gene Expression During Smallpox, Monkeypox, and Vaccinia Infection Using Both in vitro and in vivo Primate Models. XVth International Poxvirus and Iridovirus Conference. September 2004, Oxford, England; W8.7.

E.A. Fritz, L.E. Hensley, C.L. Karp, R. Fisher, J. Paragas, H.A. Young, P.B. Jahrling, T.W. Geisbert. Evaluation of Interferon-beta as a Therapeutic Treatment for Ebola Hemorrhagic Fever in Nonhuman Primates. Cytokines in Cancer and Immunity. October 2004, San Juan, Puerto Rico; Paper No. 225.

Domestic

B. Yount, K.M. Curtis, E.A. Fritz, L.E. Hensley, P.B. Jahrling, E. Prentice, M.R. Denison, T.W. Geisbert, A.C. Sims, R.S. Baric. Reverse Genetics of a Full-Length Infectious cDNA of the Severe Acute Respiratory Disease Syndrome Coronavirus. 2004 Keystone Symposium on Bioterrorism and Emerging Infectious Diseases: Antimicrobials, Therapeutics and Immune-Modulators (K2). January 2004, Keystone, Co; Abstract No. 040.

L.E. Hensley, E.A. Fritz, C.L. Karp, R. Fisher, J. Paragas, H.A. Young, P.B. Jahrling. Evaluation of Interferon-beta as a Therapeutic Treatment for Ebola Hemorrhagic Fever in Nonhuman Primates. 2004 Keystone Symposium on Bioterrorism and Emerging Infectious Diseases: Antimicrobials, Therapeutics and Immune-Modulators (K2). January 2004, Keystone, Co; Abstract No. 207.

E.A. Fritz, D. Reed., H.A. Young, K.M. Daddario, K.H. Rubins, R.F. Fisher, T.W. Geisbert, L.E. Hensley. Role of Type I Interferons in the Pathogenesis of Filovirus Infection. XIII International Congress of Virology. July 2005, San Francisco, California; Poster No. 37.5-V-259.

T.W. Geisbert, S. Jones, E.A. Fritz, A.S. Shurtleff, J. B. Geisbert, R. Liebscher, A. Grolla, U. Stroher, L. Fernando, K.M. Daddario, M.S. Guttieri, B. Mothe, T. Larsen, L.E. Hensley, P.B. Jahrling, H. Feldmen. Live Attenuated Recombinant Vaccine Protects Nonhuman Primates Against a Lethal Challenge with Lassa Virus. XIII International Congress of Virology. July 2005, San Francisco, California; Session No. 126-V.

L.E. Hensley, T. Larsen, E.A. Fritz, J.B. Geisbert, K.M. Daddario, K.H. Rubins, D. Reed, R. Fisher, H.A. Young, T.W. Geisbert. Temporal Analysis of Marburg Hemorrhagic Fever in Cynomologous Macaques. . XIII International Congress of Virology. July 2005, San Francisco, California; Session No. 89-V.

J.B. Geisbert, L.E. Hensley, K.M. Daddario, C. Nabel, E. Kagen, E.A. Fritz, P.B. Jahrling, G.J. Nabel, T.W. Geisbert, N.J. Sullivan. Inhibition of Ebola Virus Infection by Specific Viral Gene Silencing. . XIII International Congress of Virology. July 2005, San Francisco, California; Poster No. 48-V-155.

K. Rubins, L.E. Hensley, E.A. Fritz, R. Fisher, J. Huggins, J. LeDuc, P.B. Jahrling, P.Brown, D. Relman. Comparative Analysis of Host and Viral Gene Expression During Smallpox Infection Usning in vitro and in vivo Primate Models. . XIII International Congress of Virology. July 2005, San Francisco, California; Poster No. 174-V-286.

12) *SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES* **Include dates, names and locations of seminars.**

2005 NCI-Frederick-USAMRIID Summer Student Seminar Series. Frederick, Maryland; August 2005: Understanding Ebola and Marburg Virus Pathogenesis.

13) *PROFESSIONAL AWARDS RECEIVED DURING TENURE*

14) *POST-TENURE POSITION TITLE*

Guest Researcher

15) *POST-TENURE ORGANIZATION* **Provide name and address of organization.**

USAMRIID, Frederick, Maryland

16) *POST-TENURE POSITION STATUS / CATEGORY* **Please indicate only one.**

- ☐ Remain at Host Agency as Permanent Employee
- ☒ Remain at Host Agency as Contract/Temporary Employee
  Abbreviate Host Laboratory/Center **USAMRIID**
- ☐ Research Position at Another US Government Laboratory
- ☐ Administrative Position at US Government Laboratory
- ☐ Research Position at Foreign Government Laboratory
- ☐ Research/Teaching at US College/University
- ☐ Research/Teaching at Foreign College/University
- ☐ Research/Administration in Industry
- ☐ Research/Administration in Non-Profit Organization
- ☐ Postdoctoral Research
- ☐ Self Employed
- ☐ Other: **specify** _____

17) *APPRAISAL OF RESEARCH ASSOCIATESHIP PROGRAM*
On a scale of 1 – 10 (poor - excellent), please rate the following:

SHORT TERM VALUE

10 Development of knowledge, skills, and research productivity
Comments

LONG TERM VALUE

10 How the National Academies Associateship award affected your career to date
Comments

LAB SUPPORT

9 Quality of support--equipment, funding, orientation, safety and health guidelines, etc.
Comments

ADVISER SUPPORT

10 Quality of mentoring from the Adviser

Comments

LPR SUPPORT

10 Quality administrative support from the LPR

Comments

NRC SUPPORT

10 Quality of administrative support from the NRC

Comments

18) *PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT.*

US Postal Service mailing address	THIS FORM SHOULD BE E-MAILED	Express Delivery address
Research Associateship Programs	**directly to your NRC coordinator**	**Research Associateship Programs**
The National Academies	**website**	**The National Academies**
500 Fifth Street NW	www.national-academies.org/rap	**2001 Wisconsin Avenue, NW [GR 322A]**
Washington, DC 20001		**Washington, DC 20007**
n:\AO Forms	**Research Associateship Programs**	Rev. 07/2006
ID# 0275480	cc:	**cost-center #**

PA Fiscal Asst

THE NATIONAL ACADEMIES
Advisers to the Nation on Science, Engineering, and Medicine
National Research Council

Research Associateship Programs

FINAL REPORT

Print Layout View

Return this form directly to the NRC as an E-mail attachment, or print out and mail or fax.

1) *Associate Last or Family Name*	*First Name*	*M.I.*
Goff	**Arthur**	**J**

2) *FORWARDING Address* (to which your tax statement will be mailed)

Res. or Inst. Residence
Street 5337 Duke Court
City, State Zip Frederick, MD 21703

FORWARDING Phone(s) and E-Mail (if known)

Home Phone: 301-695-6442
Alt. Phone: 301-788-9962
E-mail: Arthur.Goff@det.amedd.army.mil

3) *Today's Date*

November 28, 2006

Dates of Tenure

from **August 19, 2004** to **October 31, 2006**

4) *Agency*	*Laboratory or Center*	*Division / Directorate / Department*
AMRMC	**USAMRIID**	**Virology**

5) *Name of Laboratory NRC Adviser* (and USMA Mentor, if applicable)

Lisa Hensley, Ph.D.

6) *TITLE OF RESEARCH PROPOSAL*

Clinical management plan for Orthopox virus infection

7) *SUMMARY OF RESEARCH DURING TENURE* **Itemize significant findings in concise form, utilizing key concepts/words.**

1) We have engineered a cowpox virus expressing the green fluorescent protein (eGFP) under control of the vaccinia virus (VV) early/late promoter.

2) Using the above mentioned recombinant virus we tested a novel class of drugs for anti-cowpox activity in mice.

3) Also using the mouse model of cowpox virus infection, we developed a model for vaccinia-induced myocarditis.

4) We also engineered a GFP-expressing Monkeypox virus (MPX-eGFP) that was used in conjunction with whole body flourescence resonance imaging to develop a disease progression model for intravenous infection of Monkeypox in non-human primates.

5)

(USMA Davies Fellow: please add summary of teaching, including classes taught.)

8) *RESEARCH IN PROGRESS* **Describe in no more than 100 words.**

Currently there are no pathophysiological data regarding the clinical manifestations of orthopoxvirus infection in humans and furthermore no treatment plan. The research in progress will provide guidance for the treatment and care of orthopox virus infected humans. A novel wireless total implant telemetry system is used to monitor in real time the changes in several physiologic parameters in response to infection and treatment. These physiologic changes are correlated to serum cytokine levels and viral load. First, an initial observational study to follow simple clinical parameters in monkeys challenged by the intravenous route with monkeypox virus was done. Next a controlled treatment trial will employ a clinical management plan based on the World Health Organization's plan for the management of dengue haemorrhagic fever/dengue shock syndrome (DHF/DSS) in humans.

9) *PUBLICATIONS AND PAPERS RESULTING FROM NATIONAL ACADEMIES ASSOCIATESHIP RESEARCH*

Provide complete citations: author(s), title, full name of journal, volume number, page number(s), and year of publication.

a) Publications in peer-reviewed journals

Goff, A.J. and Paragas, J. A Survey of Antiviral Drugs for Bioweapons. Accepted for publication in Antiviral Chemistry and Chemptherapy

b) Books, book chapters, other publications

c) Manuscripts in preparation, manuscripts submitted

Goff, A.J., Lawler, J., Twenhafel, N., Garrison, A., Hartmann, E., Shamblin, J., Mucker, E., Huggins, J.W., and Paragas, J. Orthopox-Induced Myocarditis. In Review at The American Journal of Pathology.

Goff, A.J., Hartmann, C., Garrison, A., Mucker, E., Huggins, J.W., and Paragas, J. Whole-Animal Visualization of Cowpox Virus Replication. Manuscript in preparation.

10) *PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM NATIONAL ACADEMIES ASSOCIATESHIP RESEARCH*
Provide titles, inventors, and dates of applications.

11) *PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES*
Provide complete references: author(s), title, abstract/proceeding citation, meeting name and location.

International

Domestic

1) Goff, A.J., Hartmann, C., Garrison, A., Mucker, E., Huggins, J.W., and Paragas, J. Whole-Animal Visualization of Cowpox Virus Replication. Abstract #W37-1. The American Society for Virology 24th Annual Meeting. June 18th to June 22nd, 2005. Penn State University, University Park Campus, State College, Pennsylvania.

Using whole-body fluorescence reflective imaging (FRI), we were able to spatially and temporally monitor cowpox virus (CPV) replication in vivo. Smallpox and other orthopox viruses pose a significant bioterrorism and public health threat. There is a need to develop antiviral and vaccine strategies. For this reason, it is necessary to establish animal models that approximate the disease course of a human Variola virus infection. We have engineered a CPV expressing the green fluorescent protein (eGFP) under control of the vaccinia virus (VV) early/late promoter between the counterparts of VV Copenhagen genes J4R and J5L (CPV-eGFP). Adding eGFP to the CPV genome allowed for whole-body FRI of viral replication in vivo. Single-step growth curves of CPV and CPV-eGFP were comparable. The engineered virus had plaque morphology similar to that of the wild-type virus, in addition to expressing eGFP. In i.p.-infected mice, CPV-eGFP had an LD50 of 5.5Log10 as compared to 4.8Log10 for the wild-type virus (X2(1)=5.05, p=0.0247). Although there was a statistical difference in the LD50, there was no statistical difference for the mean time to death (CPV=7.0, CPV-eGFP=6.4, X2(1)=1.39, p=0.2390). Using whole-body FRI, CPV-eGFP was first detected in the mesenteric tissue above the small intestine on day 1 post-infection. On day 3, GFP signal was detected in all of the mesentery of the abdomen. The infection spread to the upper gastrointestinal tract and cells surrounding the liver on day 4. The virus infected all the organs in the lower abdomen by day 5 and had infected most major organs, except the heart and brain, by day 6. In addition, we were able to correlate viral load with disease progression, allowing for a more complete understanding of poxvirus infections.

2) Goff, A.J., Hartmann, C., Garrison, A., Mucker, E., Huggins, J.W., and Paragas, J. Whole-Animal Visualization of Cowpox Virus Replication. The International Congress of Virology. July 23rd to July 28th 2005. San Francisco, CA.

Background

Smallpox and other Orthopox viruses pose a significant bioterrorism and public health threat. There is a need to develop antiviral and vaccine strategies. For this reason, it is necessary to establish animal models that approximate the disease course of a human Variola virus infection.

Methods

We engineered a cowpox virus (CPV) expressing the green fluorescent protein (eGFP) under control of the vaccinia virus (VV) early/late promoter between the counterparts of VV Copenhagen genes J4R and J5L (CPV-eGFP). Adding eGFP to the CPV genome allowed for whole-body fluorescence reflective imaging (FRI) of viral replication in vivo.

Results

Single-step growth curves of CPV and CPV-eGFP were comparable. The engineered virus had plaque morphology similar to that of the wild-type virus, in addition to expressing eGFP. In i.p.-infected mice, CPV-eGFP had an LD50 of 5.5 log10 as compared to 4.8 log10 for the wild-type virus (X2(1)=5.05, p=0.0247). Although there was a statistical difference in the LD50, there was no statistical difference for the mean time to death (CPV=7.0, CPV-eGFP=6.4, X2(1)=1.39, p=0.2390). Using whole-body FRI, CPV-eGFP was first detected in the mesenteric tissue above the small intestine on day 1 postinfection. On day 3, GFP signal was detected in all of the mesentery of the abdomen. The infection spread to the upper gastrointestinal tract and cells surrounding the liver on day 4. The virus infected all the organs in the lower abdomen by day 5 and had infected most major organs, except the brain, by day 6. In addition, we were able to correlate viral load with disease progression, allowing for a more complete understanding of poxvirus infections.

Conclusions

Using FRI, we were able to spatially and temporally monitor CPV replication in vivo.

12) *SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES* **Include dates, names and locations of seminars.**

13) *PROFESSIONAL AWARDS RECEIVED DURING TENURE*

14) *POST-TENURE POSITION TITLE*

Research Scientist Level 4/Virologist

15) *POST-TENURE ORGANIZATION* **Provide name and address of organization.**

USAMRIID

16) *POST-TENURE POSITION STATUS / CATEGORY* **Please indicate only one.**

☐ Remain at Host Agency as Permanent Employee ☒ Remain at Host Agency as Contract/Temporary Employee

Abbreviate Host Laboratory/Center _____

- ☐ Research Position at Another US Government Laboratory
- ☐ Administrative Position at US Government Laboratory
- ☐ Research Position at Foreign Government Laboratory
- ☐ Research/Teaching at US College/University
- ☐ Research/Teaching at Foreign College/University
- ☐ Research/Administration in Industry
- ☐ Research/Administration in Non-Profit Organization
- ☐ Postdoctoral Research
- ☐ Self Employed
- ☐ Other: **specify** _____

17) *APPRAISAL OF RESEARCH ASSOCIATESHIP PROGRAM*

On a scale of 1 – 10 (poor - excellent), please rate the following:

SHORT TERM VALUE

8 Development of knowledge, skills, and research productivity
Comments

LONG TERM VALUE

10 How the National Academies Associateship award affected your career to date
Comments

LAB SUPPORT

10 Quality of support--equipment, funding, orientation, safety and health guidelines, etc.
Comments

ADVISER/MENTOR SUPPORT

8 Quality of mentoring from the Lab NRC Adviser (USMA Mentor, if applicable)

Comments

LPR SUPPORT

10 Quality administrative support from the LPR
Comments

NRC SUPPORT

10 Quality of administrative support from the NRC
Comments

18) *PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT.*

THE NATIONAL ACADEMIES
Advisers to the Nation on Science, Engineering, and Medicine

Research Associateship Programs

FINAL REPORT

Print Layout View

Return this form directly to the National Academies as an E-mail attachment, or print out and mail or fax.

1) *Associate Last or Family Name*	*First Name*	*M.I.*
Hoard-Fruchey	**Heidi**	**M**

2) *FORWARDING Address* (to which your tax statement will be mailed)	*FORWARDING Phone(s) and E-Mail* (if known)
Res. or Inst. Street **605 Tupelo Ct** City, State Zip **Edgewood, MD 21040**	**Home Phone: 443-622-9000** **Alt. Phone: 443-622-6027** **E-mail: hoardheidi@hotmail.com**

3) *Today's Date*	*Dates of Tenure*
April 24, 2006	from **July 19, 2004** to **April 28, 2006**

4) *Agency*	*Laboratory or NASA Center*	*Division / Branch / Directorate*
AMRMC		**Analytical Tox/Neurobehavioral Tox**

5) *Name of Research Associateship Programs Adviser*

Dr. Michael Adler

6) *TITLE OF RESEARCH PROPOSAL*

Characterization of botulinum toxin light chain stability and endoprotease activity

7) *SUMMARY OF RESEARCH DURING TENURE* Itemize significant findings in concise form, utilizing key concepts/words.

1) Stability of BoNT/A and /B recombinant light chains (rLC) was assessed in 7 solutions with greatest stability in intracellular buffer followed by 40 mM HEPES pH 7.3. Both were more stable in water than expected with half-lives of >1 week.

2) BoNT/A rLC stability increases with increasing milkfat, but milkfat content did not affect BoNT/B rLC stability, suggesting lipids play a role in BoNT/A stability and factors contributing to stability may be serotype specific.

3) Compound 35 inhibits BoNT/A, /B, and /E LC activities, and is a potential broad range inhibitor of BoNT activity.

4) Two derivatives of compound 35 also inhibit BoNT/A and BoNT/B activity, suggesting that derivatives of compound 35 may be useful for treatment of BoNT intoxication.

5) In collaboration with CPT Angela Purcell, a capillary electrophoresis assay was developed for BoNT/A and /E activity.

8) *RESEARCH IN PROGRESS* Describe in no more than 100 words.

CPT Angela Purcell will continue using the developed CE assay to further characterize the activities of BoNTs. The stability studies have been completed. The compound 35 characterization will continue in the laboratory by other members.

9) *PUBLICATIONS AND PAPERS RESULTING FROM NATIONAL ACADEMIES ASSOCIATESHIP RESEARCH*

Provide complete citations: author(s), title, full name of journal, volume number, page number(s), and year of publication.

a) Publications in peer-reviewed journals

b) Books, book chapters, other publications

c) Manuscripts in preparation, manuscripts submitted

Heidi Hoard-Fruchey and Michael Adler. In vitro stability of botulinum neurotoxin serotypes A and B recombinant light chains in human serum, buffered solutions, water, and milk. Technical Report for the United States Army Medical Research Institute of Chemical Defense

Michael Adler, Andrew Ternay, James Nicholson, Brennie E. Hackley, Jr., and Heidi Hoard-Fruchey. Synthesis and evaluation of compound 35 as a potential botulinum neurotoxin inhibitor. Technical Report for the United States Army Medical Research Institute of Chemical Defense

Michael Adler, Heather Manley, Heidi Hoard-Fruchey. Suitability of clonal S26 cells for botulinum neurotoxin studies. Technical Report for the United States Army Medical Research Institute of Chemical Defense.

10) *PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM NATIONAL ACADEMIES ASSOCIATESHIP RESEARCH*
Provide titles, inventors, and dates of applications.

11) *PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES*
Provide complete references: author(s), title, abstract/proceeding citation, meeting name and location.

International

Hoard-Fruchey H, Smith L, Schmidt J, Adler M. (2005) #88: In vitro stability of botulinum neurotoxin serotypes A and B recombinant light chains in physiological solutions, water, and milk. The 5th International Conference on Basic and Therapeutic Aspects of Botulinum and Tetanus Toxins, Denver, CO.

Domestic

Hoard-Fruchey H, Ternay AL, Smith L, Hackley BE, Adler M. (2005) P24: Inhibition of BoNT/A, /B, and /E light chains by compound 35 and derivatives. Interagency Botulism Research Coordinating Committee 42nd General Meeting, Baltimore, MD.

Gallagher SJ, Hoard-Fruchey H, Powers JC, Smith L, Hackley BE, Adler M. (2005) P23: Compound screen to identify botulinum neurotoxin serotype A and B inhibitors. Interagency Botulism Research Coordinating Committee 42nd General Meeting, Baltimore, MD.

Purcell A, Adler M, Smith L, Hoard-Fruchey H. (2005) P25: Capillary electrophoresis assays for botulinum neurotoxin studies. Interagency Botulism Research Coordinating Committee 42nd General Meeting, Baltimore, MD.

Hoard-Fruchey H, Smith L, Schmidt J, Adler M. (2004) E-7: A sensitive microplate assay for evaluating the botulinum neurotoxin A light chain. Interagency Botulism Research Coordinating Committee 41st General Meeting, College Park, MD.

12) *SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES* **Include dates, names and locations of seminars.**

17 Nov 2004 Briefing for potential NRC candidates. Botulinum toxins: stability and therapeutics. USAMRICD, Aberdeen Proving Grounds, MD
28 Sept 2005 USAMRICD Expanded Staff Seminar. A capillary electrophoresis-based assay for botulinum neurotoxin catalytic activity. USAMRICD, Aberdeen Proving Grounds, MD

13) *PROFESSIONAL AWARDS RECEIVED DURING TENURE*

14) *POST-TENURE POSITION TITLE*

STAS contractor

15) *POST-TENURE ORGANIZATION* **Provide name and address of organization.**

USAMRICD
3100 Ricketts Point Rd
APG-EA, MD 21010

16) *POST-TENURE POSITION STATUS / CATEGORY* **Please indicate only one.**

- ☐ Remain at Host Agency as Permanent Employee
- ☒ Remain at Host Agency as Contract/Temporary Employee
  Abbreviate Host Laboratory/Center **USAMRICD**
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- ☐ Administrative Position at US Government Laboratory
- ☐ Research Position at Foreign Government Laboratory
- ☐ Research/Teaching at US College/University
- ☐ Research/Teaching at Foreign College/University
- ☐ Research/Administration in Industry
- ☐ Research/Administration in Non-Profit Organization
- ☐ Postdoctoral Research
- ☐ Self Employed
- ☐ Other: specify _____

17) *APPRAISAL OF RESEARCH ASSOCIATESHIP PROGRAM*
On a scale of 1 – 10 (poor - excellent), please rate the following:

SHORT TERM VALUE

8 Development of knowledge, skills, and research productivity

Comments

I think I could have been more productive if the amount of paperwork and mandatory training sessions (POSH, drug abuse/alcoholism, etc.) was reduced. I think I lost about a month to a month and a half every year to the training sessions alone.

LONG TERM VALUE

7 How the National Academies Associateship award affected your career to date

Comments

I felt isolated from the scientific community at large by the lack of seminars involving speakers from other institutes (especially academic institutes).

LAB SUPPORT

8 Quality of support--equipment, funding, orientation, safety and health guidelines, etc.

Comments

Funding was not a problem. A proper orientation is needed for NRC associates at USAMRICD to introduce the government system of paperwork and training.

ADVISER SUPPORT

Quality of mentoring from the Adviser

Comments

I decline evaluation of my adviser.

LPR SUPPORT

8 Quality administrative support from the LPR

Comments

USAMRICD needs to clarify procedure when Dr. Hackley is not available for approval and signatures.

NRC SUPPORT

10 Quality of administrative support from the NRC

Comments

My questions were always answered in a timely manner and making travel plans for conferences always went smoothly. You have a great staff!

18) *PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT.*

THE NATIONAL ACADEMIES
Advisers to the Nation on Science, Engineering, and Medicine
National Research Council

RECEIVED JAN 16 2007 ASSOCIATESHIP PROGRAMS

PA Fiscal Dap

Research Associateship Programs

FINAL REPORT

Return this form directly to the NRC as an E-mail attachment, or print out and mail or fax.

1) *Associate Last or Family Name*	*First Name*	*M.I.*
Johnson	**Erik**	**A**

2) *FORWARDING Address* (to which your tax statement will be mailed)	*FORWARDING Phone(s) and E-Mail* (if known)
Res. or Inst. Street **1402 Dalmation Dr APT T3** City, State Zip **21017**	**Home Phone: 352-514-8564** **Alt. Phone: 352-514-8562** **E-mail: erik.a.johnson1@us.army.mil**

3) *Today's Date*	*Dates of Tenure*
January 16, 2007	from **January 3, 2005** to **January 3, 2007**

4) *Agency*	*Laboratory or Center*	*Division / Directorate / Department*
AMRMC		**Analytical /Neuro Tox & Comp Med/ Path**

5) *Name of Laboratory NRC Adviser* (and USMA Mentor, if applicable)

Gary Rockwood & Robert K Kan

6) *TITLE OF RESEARCH PROPOSAL*

Investigation of the Biochemical Basis of Behavioral Deficits Seen after Exposure to Low Level Chemical Warfare Nerve Agents in Guinea Pigs

7) *SUMMARY OF RESEARCH DURING TENURE* **Itemize significant findings in concise form, utilizing key concepts/words.**

1) Morris water maze (MWM) is not a good behavioral model for repeated, low dose soman or sarin exposure.

2) Repeated, low dose exposures to soman do not lead to cytoskeletal or synaptic derangements nor dose this exposure paradigm result in increased apoptsis in hippocampus or parietal cortex.

3) Repeated, low dose exposures to soman does lead to significant changes in glutamate receptor immunoreactivity though the ramifications of this are not fully known.

4) Characterized sixteen different antibodies for cross-species immunoreactivity in guinea pigs and wrote protocols to describe the process.

5) Acute exposure to soman reveals no significant changes in synaptic or certain cytoskeletal protein immunoreactivities though significant changes were observed in neruon and astrocyte-specific proteins.

(USMA Davies Fellow: please add summary of teaching, including classes taught.)

8) *RESEARCH IN PROGRESS* **Describe in no more than 100 words.**

My current research is focused on the role of inflammatory mediators in the observed brain pathology of acute soman exposure. We have found several key inflammatory cytokines and chemokines are upregulated early following soman exposure. Current data suggests that inflammation likely plays an integral role in the progression, severity and lethality of acute soman exposure even with antidote pretreatment.

9) *PUBLICATIONS AND PAPERS RESULTING FROM NRC ASSOCIATESHIP RESEARCH*

Provide complete citations: author(s), title, full name of journal, volume number, page number(s), and year of publication.

a) Publications in peer-reviewed journals

none

b) Books, book chapters, other publications

Johnson EA, Daugherty KS, Gallagher SA, & DeFord SM. (2006) Analyzing protein changes in guinea pig tissue lysates using non-guinea pig specific antibodies: Procedures for Western blotting and examples using 16 individual antibodies for common CNS proteins. Technical report for USAMRICD, MAR 06, TR-06-xx.

c) Manuscripts in preparation, manuscripts submitted

Erik A. Johnson, Kelly S. Daugherty, Sarah J. Gallagher, Anita V. Moran and S. Michelle DeFord. (2007) Chronic glutamate receptor pathology following repeated sub-lethal soman exposure in the absence of Morris water maze deficits. Submitted to Journal of Neurobehavior JAN07

Erik A. Johnson, Denise Fath, Christina P. Tompkins and Robert K. Kan. (2007) Significant upregulation of inflammatory mediators in the brain following acute soman exposure. In Preparation.

Erik A. Johnson, Denise Fath, Christina P. Tompkins and Robert K. Kan. (2007) Inflammatory mediators are expressed by neural cells following acute soman exposure. In Preparation.

10) *PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM NRC ASSOCIATESHIP RESEARCH*

Provide titles, inventors, and dates of applications.

none

11) *PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES*

Provide complete references: author(s), title, abstract/proceeding citation, meeting name and location.

International

none

Domestic

E.A. Johnson, A. Moran, K.S. Daugherty, S.J. Gallagher & S.M. DeFord., REPEATED SUB-LETHAL EXPOSURE TO SOMAN PRODUCES SIGNIFICANT CHANGES IN GLUTAMATE RECEPTOR IMMUNOREACTIVITY IN THE ABSENCE OF SIGNIFICANT BEHAVIORAL CHANGES AS MEASURED BY THE MORRIS WATER MAZE. Society for Neuroscience National Meeting, 10/06, Atlanta, GA

E.A. Johnson, K.S. Daugherty, S.J. Gallagher and S.M. DeFord, REPEATED SUB-LETHAL EXPOSURE TO SOMAN PRODUCES SIGNIFICANT CHANGES IN GLUTAMATE RECEPTOR IMMUNOREACTIVITY IN THE ABSENCE OF SIGNIFICANT BEHAVIORAL CHANGES AS MEASURED BY THE MORRIS WATER MAZE. Bioscience Review 06/06, Hunt Valley, MD

12) *SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES* **Include dates, names and locations of seminars.**

12/06, Expression of inflammatory mediators following acute soman exposure. Aberdeen Proving Ground -Edgewood Area, MD

13) *PROFESSIONAL AWARDS RECEIVED DURING TENURE*

none

14) *POST-TENURE POSITION TITLE*

STAS contractor with Battelle

15) *POST-TENURE ORGANIZATION* **Provide name and address of organization.**

Same as before (USAMRICD)

16) *POST-TENURE POSITION STATUS / CATEGORY* **Please indicate only one.**

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- ☒ Remain at Host Agency as Contract/Temporary Employee
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- ☐ Administrative Position at US Government Laboratory
- ☐ Research Position at Foreign Government Laboratory
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- ☐ Research/Teaching at Foreign College/University
- ☐ Research/Administration in Industry
- ☐ Research/Administration in Non-Profit Organization
- ☐ Postdoctoral Research
- ☐ Self Employed
- ☐ Other: specify _____

17) *APPRAISAL OF RESEARCH ASSOCIATESHIP PROGRAM*

On a scale of 1 – 10 (poor - excellent), please rate the following:

SHORT TERM VALUE

10 Development of knowledge, skills, and research productivity

Comments

LONG TERM VALUE

7 How the NRC Associateship award affected your career to date

Comments

LAB SUPPORT

10 Quality of support--equipment, funding, orientation, safety and health guidelines, etc.

Comments

All top notch. Funding was never an issue.

ADVISER/MENTOR SUPPORT

10 Quality of mentoring from the Lab NRC Adviser (USMA Mentor, if applicable)

Comments

Dr. Kan has been magnificent. He has really helped me grow as a scientist. Dr. Rockwood and I had very limited interaction. My work was outside the realm of his expertise.

LPR SUPPORT

5 Quality administrative support from the Agency/Lab NRC Program Representative (LPR)

Comments

I had very little interaction with Dr. Hackley, though he was helpful when I could find him. Dr. Kan is too new to properly evaluate but I think he will be much more hands on.

NRC SUPPORT

10 Quality of administrative support from the NRC

Comments

Always helpful

18) *PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT.*

I think a better screening method for potential mentors would be very helpful. Though I had pretty good luck with my mentors, I know many of the other mentors around the institute were not suitable. Also, a more clearly defined status as NRC fellows is absolutely necessary for tax purposes. I know all the NRCs here I talked to raised red flags with the IRS every year that taxes was filed. Better guidance form the NRC is necessary with perhaps a form letter that can be sent to the IRS during filing or more clear instructions.

THE NATIONAL ACADEMIES
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Research Associateship Programs

FINAL REPORT

Return this form directly to the National Academies as an E-mail attachment, or print out and mail or fax.

1) *Associate Last or Family Name*	*First Name*	*M.I.*
Klas	**Sheri**	**D.**

2) *FORWARDING Address* (for tax statement / final stipend check)	*FORWARDING Phone(s) and E-Mail* (if known)
1909 Chambers Dr. **Bozeman, MT 59715**	**Home phone:** **Alt. phone:** **E-mail: sheriklas@yahoo.com**
3) *Today's Date* **February 23, 2006**	*Dates of Tenure* **from December 6, 2004 to February 28, 2006**

4) *Agency*	*Laboratory or NASA Center*	*Division / Branch / Directorate*
AMRMC	**USAMRIID**	

5) *NAME OF RESEARCH ADVISER*
Robert G. Ulrich

6) *TITLE OF RESEARCH PROPOSAL*

Generation and immunization of HLA*A201 restricted peptides from the pCD1 plasmid of Yersinia pestis to elicit specific Tc

7) *SUMMARY OF RESEARCH DURING TENURE* **Itemize significant findings in concise form, utilizing key concepts/words.**

1) **Identified 2 different HLA-A2 restricted CTL epitopes from Yersinia pestis**
2) **Discovered which human cell types can be infected by Yersinia pestis**
3)
4)
5)

8) *RESEARCH IN PROGRESS* **Describe in no more than 100 words.**

During this first year we have successfully generated 3 peptides from the F1 protein of Yersinia pestis that were specific for the human HLAA-2 molecule. We picked the highest scoring peptides based on a mathematical algorithm (http://www.syfpeithi.de/Scripts/MHCServer.dll/Info.htm). These peptides were used in standard CTL asaays to asses the ability of Y.pestis stimulated human T-cells to recognize the aforementioned peptides in a secondary response. The results from these experiments yielded 1 peptide (peptide A) that essentially every donor tested responded to favorably. Peptide B was responded to by approximately 60% of the donors, but the response was not as robust as peptide A. The final peptide was not responded to by any of the donors and therefore has become the negative control for the remainder of the studies.

9) *PUBLICATIONS AND PAPERS RESULTING FROM THE NATIONAL ACADEMIES ASSOCIATESHIP RESEARCH*
Provide complete citations: author(s), title, full name of journal, volume number, page number(s), and year of publication.

a) **Publications in peer-reviewed journals**

b) Books, book chapters, other publications

c) Manuscripts in preparation, manuscripts submitted

Human immune cells have different susceptibilities to infection with Yersinia pestis.

Identification of HLA*A201 restricted CD8 epitopes from the F1 protein of Yersinia pestis.

10 *PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM THE NATIONAL ACADEMIES ASSOCIATESHIP RESEARCH*
Provide titles, inventors, and dates of applications.

11) *PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES*
Provide complete references: author(s), title, abstract/proceeding citation, meeting name and location.

International

Domestic

12) *SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES* **Include dates, names and locations of seminars.**

13) *PROFESSIONAL AWARDS RECEIVED DURING TENURE*

14) *POST-TENURE POSITION TITLE*

Post-doctoral scientist

15) *POST-TENURE ORGANIZATION* **Provide name and city of organization.**

Ligocyte Pharmaceuticals
Bozeman, MT

16) *POST-TENURE POSITION STATUS / CATEGORY* **Please indicate only one.**

- [ ] Remain at Host Agency as Permanent Employee
- [ ] Remain at Host Agency as Contract/Temporary Employee

Abbreviate Host Laboratory/Center_____

- [ ] Research Position at Another US Government Laboratory
- [ ] Administrative Position at US Government Laboratory
- [ ] Research Position at Foreign Government Laboratory
- [ ] Research/Teaching at US College/University
- [ ] Research/Teaching at Foreign College/University
- [ ] Research/Administration in Industry
- [ ] Research/Admin in Non-Profit Organization
- [x] Postdoctoral Research
- [ ] Self Employed
- [ ] Other: specify _____

17) *APPRAISAL OF RESEARCH ASSOCIATESHIP PROGRAM*

On a scale of 1 – 10 (poor - excellent), please rate the following:

SHORT TERM VALUE

8.00 Development of knowledge, skills, and research productivity
Comments

LONG TERM VALUE

10 How the National Academies Associateship award affected your career to date
Comments

LAB SUPPORT

7 Quality of support--equipment, funding, orientation, safety and health guidelines, etc.
Comments

ADVISER SUPPORT

10 Quality of mentoring from the Adviser
Comments

LPR SUPPORT

10 Quality administrative support from the LPR
Comments

NRC SUPPORT

10 Quality of administrative support from the NRC
Comments

18) *PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT.*

Fiscal PA Disp

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Advisers to the Nation on Science, Engineering, and Medicine

Research Associateship Programs

FINAL REPORT

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Return this form directly to the National Academies as an E-mail attachment, or print out and mail or fax.

1) *Associate Last or Family Name*	*First Name*	*M.I.*
Kremenevskiy	**Igor**	

2) *FORWARDING Address* (to which your tax statement will be mailed)
Res. or Inst. c/o **Alena Nareika**
Street **1714 N.Woodmere dr., Apt. 21**
City, State Zip **Charleston, SC, 29407**

FORWARDING Phone(s) and E-Mail (if known)
Home Phone: **+375-17-298-5087**
Alt. Phone: **210-916-1972**
E-mail: **kremenevskiy@rambler.ru**

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AUG 21 2006
ASSOCIATESHIP PROGRAMS

3) *Today's Date*: **August 15, 2006**

Dates of Tenure: from **September 6, 2005** to ~~September 1, 2006~~

4) *Agency*	*Laboratory or Center*	*Division / Branch / Directorate*
AMRMC	**USA ISR**	**Hemostatsis**

5) *Name of Research Associateship Programs Adviser*
Anthony E. Pusateri/ Michail A. Dubick

6) *TITLE OF RESEARCH PROPOSAL*

"Effect of Activated Recombinant Factor VII (rFVIIa) Administration on Survival in Swine during Hypovolemic Shock and Uncontrolled Hemorrhage"

7) *SUMMARY OF RESEARCH DURING TENURE* **Itemize significant findings in concise form, utilizing key concepts/words.**

1) We finished the model development phase. There were tested respiratory and metabolic acidosis models in pigs. It was confirmed some previously established procedures concerning anesthesia, catheters, and monitoring of hemodynamics.

2) Our experiments showed respiratory as well as metabolic acidosis induced the development of coagulopathy in the pigs. The restoration of pH did not restore blood coagulation.

3) Adding rFVIIa to pig plasma in vitro in dose 1.26µg/ml final plasma concentration increased the maximal thrombin generation, however it did not completely correct coagulopathy.

4) It was studied the effects different fluid solutions (Hextend and Lactated Ringer) on coagulation function of normal and hypothermic human plasma in vitro with and without 90µg/kg rFVIIa (1.26µg/ml final plasma concentration).

5) We modified the thrombin generation test (developed by Hemker H.C. et al. 1993; 2003). This assay is suitable for detecting treatment-depending changes in the kinetic of thrombin generation and monitoring the pharmacokinetics of rfVIIa.

8) *RESEARCH IN PROGRESS* **Describe in no more than 100 words.**

It was developed an experimental animal model of acidosis. The results of in vitro experiments provide further experimental evidence that rFVIIa may be useful in treating hemorrhage in trauma patients despite hemodilution from massive fluid resuscitation or presence of hypothermia and acidosis. The effects of rVIIa will be tested on this acidosis model as well as hemorrhagic shock model in US Army ISR.

9) *PUBLICATIONS AND PAPERS RESULTING FROM NATIONAL ACADEMIES ASSOCIATESHIP RESEARCH*
Provide complete citations: author(s), title, full name of journal, volume number, page number(s), and year of publication.

a) **Publications in peer-reviewed journals**

NO

b) **Books, book chapters, other publications**

NO

c) **Manuscripts in preparation, manuscripts submitted**

NO

10) *PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM NATIONAL ACADEMIES ASSOCIATESHIP RESEARCH*
Provide titles, inventors, and dates of applications.

NO

11) *PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES*
Provide complete references: author(s), title, abstract/proceeding citation, meeting name and location.

International

NO

Domestic

Kremenevskiy I, Pusatery AE, Scherer MR, Fedyk CG, Dubick MA, Delgado AV. Effect of hemodilution or hypothermia on thrombin generation in vitro: improvement with rFVIIa. Presented at the Advanced Technology Applications to Combat Casualty Care (ATACCC) Conference, St.Peterburg, Florida. 14-18 August 2006.

12) *SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES* **Include dates, names and locations of seminars.**

NO

13) *PROFESSIONAL AWARDS RECEIVED DURING TENURE*

NO

14) *POST-TENURE POSITION TITLE*

Postdoctoral Research Fellowship

15) *POST-TENURE ORGANIZATION* **Provide name and address of organization.**

Department of Experimental Pathology and Transfusiology
Republican Scientific-Practical Centre of Hematology and Transfusiology.
160 Dolginovskiy Tract, Minsk 220059, Belarus

16) *POST-TENURE POSITION STATUS / CATEGORY* **Please indicate only one.**

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- ☐ Remain at Host Agency as Contract/Temporary Employee
  Abbreviate Host Laboratory/Center _____
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- ☐ Research/Teaching at Foreign College/University
- ☐ Research/Administration in Industry
- ☐ Research/Administration in Non-Profit Organization
- ☒ Postdoctoral Research
- ☐ Self Employed
- ☐ Other: **specify** _____

17) *APPRAISAL OF RESEARCH ASSOCIATESHIP PROGRAM*
On a scale of 1 – 10 (poor - excellent), please rate the following:

SHORT TERM VALUE

10 Development of knowledge, skills, and research productivity
Comments
NO

LONG TERM VALUE

10 How the National Academies Associateship award affected your career to date
Comments
I hope it will be in the future. I've gained experience.

LAB SUPPORT

8 Quality of support--equipment, funding, orientation, safety and health guidelines, etc.
Comments
There was some problem to get regulary internet access.

ADVISER SUPPORT

10 Quality of mentoring from the Adviser
Comments
I satisfied quality of mentoring from my adviser Dr. Tony pusateri as well as Dr. Michael Dubick.

LPR SUPPORT

10 Quality administrative support from the LPR
Comments
NO

NRC SUPPORT

10 Quality of administrative support from the NRC
Comments

I greatly appreciate quality administartive support from the NRC. The staff is very qualified and ready to help in different situation.

18) *PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT.*

NO

THE NATIONAL ACADEMIES
Advisers to the Nation on Science, Engineering, and Medicine

Research Associateship Programs

FINAL REPORT

Print Layout View

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1) *Associate Last or Family Name*	*First Name*	*M.I.*
Langston	**Jeffrey**	**L**

2) *FORWARDING Address* (to which your tax statement will be mailed)	*FORWARDING Phone(s) and E-Mail* (if known)
Res. or Inst. **Residence** Street **2124 Fallston Road** City, State Zip **Fallston, MD 21047**	**Phone: 410-436-2723** **Phone: 443-866-0310** **E-mail: Jeffrey.Langston@us.army.mil**

3) *Today's Date*	*Dates of Tenure*
May 12, 2006	from **May 12, 2003** to **May 11, 2006**

4) *Agency*	*Laboratory or NASA Center*	*Division / Branch / Directorate*
AMRMC	**USAMRICD**	**Analytical Toxicology/Neurobehavioral To**

5) *Name of Research Associateship Programs Adviser*

Gary A. Rockwood

6) *TITLE OF RESEARCH PROPOSAL*

Development of a Guinea Pig Test Battery to Assess the Behavioral Effects of Exposure to Chemical Warfare Nerve Agents

7) *SUMMARY OF RESEARCH DURING TENURE* **Itemize significant findings in concise form, utilizing key concepts/words.**

1) Repeated exposure to CWNA at doses that produce behavioral effects often also induces overt toxicity. Doses of CWNA that produce overt toxicity may produce behavioral alterations that persist months after exposure.

2) Guinea pigs are suitable subjects for evaluating of the behavioral effects of drugs and toxicants. Guinea pigs do not seem to perform well in tasks that require the animal to travel in open spaces (i.e., radial arm maze, open field).

3) Conducted dose-response study of GB with animals performing under progressive ratio schedule. Conducted dose-response study of VX with animals performing under progressive ratio schedule. Evaluated ability of animals to learn new task after VX.

4) Guinea pigs perform qualitatively similar to other rodent species on a variety of operant behavior tasks including: active avoidance, multiple schedules of reinforcement, simple schedules of reinforcement, delayed matching and discrimination.

5)

8) *RESEARCH IN PROGRESS* **Describe in no more than 100 words.**

N/A

9) *PUBLICATIONS AND PAPERS RESULTING FROM NATIONAL ACADEMIES ASSOCIATESHIP RESEARCH*

Provide complete citations: author(s), title, full name of journal, volume number, page number(s), and year of publication.

a) **Publications in peer-reviewed journals**

Langston, J. L., Adkins, A. L., Moran, A.V., Rockwood, G. A., & Deford, M. S. (2005). Effects of sarin on the operant behavior of guinea pigs. Neurotoxicol.Teratol., 27, 841-853.

b) **Books, book chapters, other publications**

N/A

c) **Manuscripts in preparation, manuscripts submitted**

Langston, J. L., Robinson, K. A., Moran, A. V., Rockwood, G. A., & Deford, M. S. (in preparation). Effects of VX on the operant behavior (Progressive Ratio, Extinction, and DRL acquisition) of guinea pigs.
Langston, J. L., Robinson, K. A., Moran, A. V., & Rockwood, G. A. (in preparation). Effects of VX on the DRL 30 sec schedule performance of guinea pigs.
Langston, J. L., Robinson, K. A., Moran, A. V., & Rockwood, G. A. (in preparation). Effects of VX on delayed-match-to-position performance of guinea pigs.
Langston, J. L. & Myers, T. M. (in preparation). Effects of VX on the acoustic startle respons of guinea pigs.

10 *PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM NATIONAL ACADEMIES ASSOCIATESHIP RESEARCH*
Provide titles, inventors, and dates of applications.

n/a

11) *PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES*
Provide complete references: author(s), title, abstract/proceeding citation, meeting name and location.

International

n/a

Domestic

Langston, J. L., Robinson, K. A., Moran, A. V., Rockwood, G. A., & DeFord, S. M. (2006, June). Effects of subacute exposure to vx on operant behavior (progressive ratio and drl) in guinea pigs. Poster presented at the U.S. Army Medical Defense Bioscience Review 2006, Hunt Valley, MD.
Langston, J. L., Yourick, D., Kohli, A., Robison, C., Burr, L., & Lumley, L. A. (2006, June). Effects of acute exposure to soman (gd) on acoustic startle response and prepulse inhibition in rats. Poster presented at the U.S. Army Medical Defense Bioscience Review 2006, Hunt Valley, MD.
Langston, J. L., Crouch, M., Adkins, A., Moran, A. V., Rockwood, G. A., DeFord, S. M. (2004, May). Effects of sublethal repeated exposure to GB on operant behavior in guinea pigs. Poster presented at the U.S. Army Medical Defense Bioscience Review 2004, Hunt Valley, MD.
DeFord, S. M., Langston, J. L., Rockwood, G. A., Adkins, A., Kahler, D. W., Crouch, M., Roberson, G., Moran, A. V. (2004, May). Neuro-functional assessment following repeated sublethal CWNA exposure. Paper presented at the U. S. Army Medical Defense Bioscience Review 2004, Hunt Valley, MD.

12) *SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES* **Include dates, names and locations of seminars.**

N/A

13) *PROFESSIONAL AWARDS RECEIVED DURING TENURE*

N/A

14) *POST-TENURE POSITION TITLE*

STAS subcontractor

15) *POST-TENURE ORGANIZATION* **Provide name and address of organization.**

USAMRICD
3100 Ricketts Point Road
Aberdeen Proving Ground, MD 21010

16) *POST-TENURE POSITION STATUS / CATEGORY* **Please indicate only one.**

- ☐ Remain at Host Agency as Permanent Employee
- ☒ Remain at Host Agency as Contract/Temporary Employee
  Abbreviate Host Laboratory/Center **USAMRICD**
- ☐ Research Position at Another US Government Laboratory
- ☐ Administrative Position at US Government Laboratory
- ☐ Research Position at Foreign Government Laboratory
- ☐ Research/Teaching at US College/University
- ☐ Research/Teaching at Foreign College/University
- ☐ Research/Administration in Industry
- ☐ Research/Administration in Non-Profit Organization
- ☐ Postdoctoral Research
- ☐ Self Employed
- ☐ Other: **specify** _____

17) *APPRAISAL OF RESEARCJ ASSOCIATESHIP PROGRAM* **Please rate each of the following on a scale of 1 (poor) to 10 (excellent).**

Your experience as a National Academies Research Associate in this federal Laboratory

7 Short-term value: development of knowledge, skills, and research productivity
Comments:

7 Long-term value: how the National Academies Associateship award affected your career to date
Comments:

Administrative Support

5 Quality of the support you received from the federal Laboratory

7 Quality of the support you received from the Research Associateship Programs staff **(Leave blank, if not applicable – e.g., NIST)**

Comments:

18) *PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT.*

US Postal Service mailing address	fax	Express Delivery address
Research Associateship Programs	202 – 334 – 2759	Research Associateship Programs
The National Academies		The National Academies
500 Fifth Street, NW [GR 322A]	website	2001 Wisconsin Avenue, NW [GR 322A]
Washington, DC 20001	www.national-academies.org/rap	Washington, DC 20007

THE NATIONAL ACADEMIES
Advisers to the Nation on Science, Engineering, and Medicine

Research Associateship Programs

FINAL REPORT

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Return this form directly to the National Academies as an E-mail attachment, or print out and mail or fax.

1) *Associate Last or Family Name*	*First Name*	*M.I.*
Miroshnikova	**Olga**	**V**

2) *FORWARDING Address* (to which your tax statement will be mailed)	*FORWARDING Phone(s) and E-Mail* (if known)
Res. or Inst. **Natalia Dyatkina** Street **150 Pocceti Way** City, State Zip **Mountain View, CA 94040**	**Home Phone: 650-949-2790** **Alt. Phone: 301-512-8565** **E-mail: olga.mirosh@gmail.com**

3) *Today's Date*	*Dates of Tenure*
February 17, 2006	from **February 24, 2003** to **February 24, 2006**

4) *Agency*	*Laboratory or Center*	*Division / Branch / Directorate*
AMRMC	**WRAIR**	**Experimental Therapeutics**

5) *Name of Research Associateship Programs Adviser*

Dr. Lin, A. J.

6) *TITLE OF RESEARCH PROPOSAL*

Potential Inhibitors of Malaria Parasites.

7) *SUMMARY OF RESEARCH DURING TENURE* **Itemize significant findings in concise form, utilizing key concepts/words.**

1) **Designed and synthesized novel antimalarial drugs.**

2) **Conducted multiple-step synthesis of Michal accepter-based peptidomimetic inhibitors.**

3) **Improved exsting methods of peptide synthesis to optimize product yield and selectivity.**

4) **Developed new approuches to overcome Mitsunobu reaction separation problem of the final product from byproduct, dicarboalkoxy hydrazine (DCH).**

5) **Investigated Structure-Activity Relationship of compounds obtained.**

8) *RESEARCH IN PROGRESS* **Describe in no more than 100 words.**

Finishing up the project and prepare manuscript for publication.

9) *PUBLICATIONS AND PAPERS RESULTING FROM NATIONAL ACADEMIES ASSOCIATESHIP RESEARCH*
Provide complete citations: author(s), title, full name of journal, volume number, page number(s), and year of publication.

a) **Publications in peer-reviewed journals**

N/A

b) **Books, book chapters, other publications**

N/A

c) **Manuscripts in preparation, manuscripts submitted**

Olga V. Miroshnikova, Shuren Zhu, Thomas H. Hudson, Lucia Gerena and Ai J. Lin. Design, synthesis and antimalarial activity of novel peptidomimetics based on Michael acceptor core.

10) *PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM NATIONAL ACADEMIES ASSOCIATESHIP RESEARCH*
Provide titles, inventors, and dates of applications.

N/A

11) *PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES*
Provide complete references: author(s), title, abstract/proceeding citation, meeting name and location.

International

N/A

Domestic

Olga V. Miroshnikova, Shuren Zhu, Thomas H. Hudson, Lucia Gerena and Ai J. Lin. Design, synthesis and antimalarial activity of novel peptidomimetics based on Michael acceptor core. 229th ACS National meeting, San Diego, March 13-17, 2005.

Extending our design and synthesis of novel peptidomimetic antimalarials based on a Michael acceptor core, our efforts are directed toward lengthening of the peptide chain by addition of extra amino acids, such as phenylglycine, phenylalanine and homophenylalanine, into the Michael acceptor backbone. Peptide coupling of the Michael acceptor with amino acids resulted in a mixture of diastereomers, which were successfully separated by column chromatography. The purified isomers were coupled with a 5-substituted aminopyrimidinyl carboxyl acid to give the final products 1a–3a and 1b-3b in high yield. The products were evaluated for their in vitro antimalarial activities against Plasmodium falciparum.

12) *SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES* **Include dates, names and locations of seminars.**

N/A

13) *PROFESSIONAL AWARDS RECEIVED DURING TENURE*

N/A

14) *POST-TENURE POSITION TITLE*

Research Chemist

15) *POST-TENURE ORGANIZATION* **Provide name and address of organization.**

Walter Reed Army Inst. of Research
Department of Med. Chemistry
503 Robert Grant Ave
Silver Spring, MD 20910

16) *POST-TENURE POSITION STATUS / CATEGORY* **Please indicate only one.**

- ☐ Remain at Host Agency as Permanent Employee
- ☒ Remain at Host Agency as Contract/Temporary Employee
  - **Abbreviate Host Laboratory/Center** **WRAIR**
- ☐ Research Position at Another US Government Laboratory
- ☐ Administrative Position at US Government Laboratory
- ☐ Research Position at Foreign Government Laboratory
- ☐ Research/Teaching at US College/University
- ☐ Research/Teaching at Foreign College/University
- ☐ Research/Administration in Industry
- ☐ Research/Administration in Non-Profit Organization
- ☐ Postdoctoral Research
- ☐ Self Employed
- ☐ Other: **specify** _____

17) *APPRAISAL OF RESEARCH ASSOCIATESHIP PROGRAM*
On a scale of 1 – 10 (poor - excellent), please rate the following:

SHORT TERM VALUE

10 Development of knowledge, skills, and research productivity
Comments

LONG TERM VALUE

10 How the National Academies Associateship award affected your career to date
Comments

LAB SUPPORT

10 Quality of support--equipment, funding, orientation, safety and health guidelines, etc.
Comments

ADVISER SUPPORT

10 Quality of mentoring from the Adviser
Comments

LPR SUPPORT

10 Quality administrative support from the LPR
Comments

NRC SUPPORT

10 Quality of administrative support from the NRC
Comments

18) *PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT.*

US Postal Service mailing address	THIS FORM SHOULD BE E-MAILED	Express Delivery address
Research Associateship Programs	directly to your NRC coordinator	Research Associateship Programs
The National Academies	website	The National Academies
500 Fifth Street, NW [GR 322A]	www.national-academies.org/rap	2001 Wisconsin Avenue, NW [GR 322A]
Washington, DC 20001		Washington, DC 20007
n:\AO Forms	Research Associateship Programs	Rev. 01/2006
ID#	cc:	cost-center #

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Advisers to the Nation on Science, Engineering, and Medicine

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Research Associateship Programs

FINAL REPORT

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1) *Associate Last or Family Name*	*First Name*	*M.I.*
Pearson	**Brooke**	

2) *FORWARDING Address* (to which your tax statement will be mailed)

Res. or Inst.
Street **104 Park Ave #202**
City, State Zip **Gaithersburg, MD 20877**

FORWARDING Phone(s) and E-Mail (if known)
Home Phone: 240-506-7337
Alt. Phone:
E-mail: bpearson23@gmail.com

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ASSOCIATESHIP PROGRAMS

3) *Today's Date*
September 26, 2006

Dates of Tenure
from **July 15, 2003**
to **October 18, 2006**

4) *Agency*	*Laboratory or Center*	*Division / Branch / Directorate*
AMRMC	**USAMRIID**	**Bacteriology Division**

5) *Name of Research Associateship Programs Adviser*

Dr. Arthur Friedlander

6) *TITLE OF RESEARCH PROPOSAL*

Characterization of the Antibody Response to Inhalational Anthrax in Humans

7) *SUMMARY OF RESEARCH DURING TENURE* **Itemize significant findings in concise form, utilizing key concepts/words.**

1) We determined the extent of the antibody reponse to the three components of the anthrax toxin: PA, LF and EF.

2) I have demonstrated that these antibodies are capable of blocking serum conversion of the full-length protective antigen (PA) to its active form.

3) These antibodies can also block the binding of full-length PA to the surface of cells.

4) I also demonstrated that the antibodies are able to block the cleavage of PA after it is already bound to cells.

5) Additionally, we demonstrated that antisera inhibits the enzymatic activity of the LF toxin.

8) *RESEARCH IN PROGRESS* **Describe in no more than 100 words.**

In order to further characterize the human immune response to anthrax, a collaboration with Diversa corporation has been established. This collaboration will allow me to identify the anthrax proteins which are immunogenic to humans. Toward this goal a method is was developed for purifying anthrax bacilli membranes which were sent to Diversa to be analized using sera from human survivors of anthrax infection via PF2D technology. The identified protiens, which we refer to as the "immuniome," represent the portion of the anthrax proteome which is immunogenic in humans. The individual immunoreactive proteins are currently being identified via mass spec. analysis

9) *PUBLICATIONS AND PAPERS RESULTING FROM NATIONAL ACADEMIES ASSOCIATESHIP RESEARCH*
Provide complete citations: author(s), title, full name of journal, volume number, page number(s), and year of publication.

a) Publications in peer-reviewed journals

b) Books, book chapters, other publications

c) Manuscripts in preparation, manuscripts submitted

Pearson, B; Little, SF; Tobery, SA; Panchal, R; Friedlander, AM. "Functional Analysis of the Human Immune Response to the Toxins of Bacillus anthracis"

10) *PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM NATIONAL ACADEMIES ASSOCIATESHIP RESEARCH*
Provide titles, inventors, and dates of applications.

11) *PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES*

Provide complete references: author(s), title, abstract/proceeding citation, meeting name and location.

International

Pearson, B; Little, SF; Tobery, SA; Panchal, R; Friedlander, AM. "Functional Analysis of the Human Immune Response to Anthrax Lethal and Edema Toxins". Bacillus - ACT 2005 International Conference. Santa Fe, NM

Domestic

12) *SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES* **Include dates, names and locations of seminars.**

13) *PROFESSIONAL AWARDS RECEIVED DURING TENURE*

14) *POST-TENURE POSITION TITLE*

Senior Scientist

15) *POST-TENURE ORGANIZATION* **Provide name and address of organization.**

Cubic Applications, Inc.
5695 King Center Drive / Suite 300
Alexandria, VA 22315

16) *POST-TENURE POSITION STATUS / CATEGORY* **Please indicate only one.**

- ☐ Remain at Host Agency as Permanent Employee
- ☐ Remain at Host Agency as Contract/Temporary Employee
  - **Abbreviate Host Laboratory/Center** _____
- ☐ Research Position at Another US Government Laboratory
- ☐ Administrative Position at US Government Laboratory
- ☐ Research Position at Foreign Government Laboratory
- ☐ Research/Teaching at US College/University
- ☐ Research/Teaching at Foreign College/University
- ☒ Research/Administration in Industry
- ☐ Research/Administration in Non-Profit Organization
- ☐ Postdoctoral Research
- ☐ Self Employed
- ☐ Other: **specify** _____

17) *APPRAISAL OF RESEARCH ASSOCIATESHIP PROGRAM*
On a scale of 1 – 10 (poor - excellent), please rate the following:

SHORT TERM VALUE

8 Development of knowledge, skills, and research productivity
Comments

LONG TERM VALUE

10 How the National Academies Associateship award affected your career to date
Comments

LAB SUPPORT

9 Quality of support--equipment, funding, orientation, safety and health guidelines, etc.
Comments

ADVISER SUPPORT

5 Quality of mentoring from the Adviser
Comments

Dr. Friedlander is a very busy man and is often not at USAMRIID, This being said I think he worked hard to be available for me when I requested his help and guidance. However, if I didn't ask to see him, I often wouldn't see him for months at a time. In many ways it is nice to be trusted to work on your own. Personally I think I would have liked to have a more interactive mentorship.

LPR SUPPORT

9 Quality administrative support from the LPR
Comments

I don't know what "LPR" stands for. If that means the lab I worked then I think the support I received administratively was excellent.

NRC SUPPORT

8 Quality of administrative support from the NRC

Comments

I really had no contract with the NRC other than in the application and renewal process. Even then the forms were sent to me and I fillef them out and then sent them back.

18) *PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT.*

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Research Associateship Programs

FINAL REPORT

Print Layout View

Return this form directly to the National Academies as an E-mail attachment, or print out and mail or fax.

1) *Associate Last or Family Name*	*First Name*	*M.I.*
Silvestri	**Lynn**	**S**

2) *FORWARDING Address* (to which your tax statement will be mailed)	*FORWARDING Phone(s) and E-Mail* (if known)
Res. or Inst. Street **201 Plantation Club Dr #1510** City, State Zip **Melbourne, FL 32940**	Home Phone: Alt. Phone: **240-626-6090** E-mail: **lynn.silvestri@hotmail.com**

3) *Today's Date*	*Dates of Tenure*
January 10, 2006	from **September 12, 2004** to **January 31, 2006**

4) *Agency*	*Laboratory or NASA Center*	*Division / Branch / Directorate*
AMRMC	**USAMRIID**	**Bacteriology**

5) *Name of Research Associateship Programs Adviser*

Sina Bavari

6) *TITLE OF RESEARCH PROPOSAL*

Identification of Inhibitors of Filovirus RNA Polymerases

7) *SUMMARY OF RESEARCH DURING TENURE* **Itemize significant findings in concise form, utilizing key concepts/words.**

1) Effective siRNA against components of the Ebola and Marburg polymerase complexes (L, VP35, VP30, and NP) were identified.

2) siRNAs were evaluated by Western blot after transfection of cells with siRNA and expression vectors. Transfection of cells with siRNA in various combinations followed by virus infection was effective in reducing virus titers.

3) Transfection of siRNA into mice by hydrodynamic shear did not protect mice from death from Ebola virus infection.

4) The amount of siRNA used, the delivery method, and lack of siRNA chemical modification for in vivo delivery likely contributed to themouse study results.

5)

8) *RESEARCH IN PROGRESS* **Describe in no more than 100 words.**

The identified siRNA sequences will be chemically modified to suit in vivo applications and re-tested in mice. Cellular targets for RNAi that may delay the function of the filovirus polymerase complex will be investigated.

9) *PUBLICATIONS AND PAPERS RESULTING FROM NATIONAL ACADEMIES ASSOCIATESHIP RESEARCH*
Provide complete citations: author(s), title, full name of journal, volume number, page number(s), and year of publication.

a) **Publications in peer-reviewed journals**

b) **Books, book chapters, other publications**

c) **Manuscripts in preparation, manuscripts submitted**

10) *PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM NATIONAL ACADEMIES ASSOCIATESHIP RESEARCH*
Provide titles, inventors, and dates of applications.

11) *PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES*
Provide complete references: author(s), title, abstract/proceeding citation, meeting name and location.

International

Domestic

12) *SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES* **Include dates, names and locations of seminars.**

13) *PROFESSIONAL AWARDS RECEIVED DURING TENURE*

14) *POST-TENURE POSITION TITLE*

15) *POST-TENURE ORGANIZATION* **Provide name and address of organization.**

16) *POST-TENURE POSITION STATUS / CATEGORY* **Please indicate only one.**

- ☐ Remain at Host Agency as Permanent Employee
- ☐ Remain at Host Agency as Contract/Temporary Employee
  Abbreviate Host Laboratory/Center _____
- ☐ Research Position at Another US Government Laboratory
- ☐ Administrative Position at US Government Laboratory
- ☐ Research Position at Foreign Government Laboratory
- ☐ Research/Teaching at US College/University
- ☐ Research/Teaching at Foreign College/University
- ☐ Research/Administration in Industry
- ☐ Research/Administration in Non-Profit Organization
- ☐ Postdoctoral Research
- ☐ Self Employed
- ☒ Other: **specify** N/A

17) *APPRAISAL OF RESEARCH ASSOCIATESHIP PROGRAM*
On a scale of 1 – 10 (poor - excellent), please rate the following:

SHORT TERM VALUE
9 Development of knowledge, skills, and research productivity
Comments

LONG TERM VALUE
8 How the National Academies Associateship award affected your career to date
Comments

LAB SUPPORT
9 Quality of support--equipment, funding, orientation, safety and health guidelines, etc.
Comments

ADVISER SUPPORT
10 Quality of mentoring from the Adviser
Comments

LPR SUPPORT
10 Quality administrative support from the LPR
Comments

NRC SUPPORT
10 Quality of administrative support from the NRC
Comments

18) *PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT.*

US Postal Service mailing address
Research Associateship Programs
The National Academies
500 Fifth Street, NW [GR 322A]

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website
www.national-academies.org/rap

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Research Associateship Programs
The National Academies
2001 Wisconsin Avenue, NW [GR 322A]

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National Research Council

Fiscal PA DRAP

Research Associateship Programs

FINAL REPORT

Return this form directly to the NRC as an E-mail attachment, or print out and mail or fax.

1) *Associate Last or Family Name*	*First Name*	*M.I.*
TONDULI	**LAURA**	**S**

2) *FORWARDING Address* (to which your tax statement will be mailed)	*FORWARDING Phone(s) and E-Mail* (if known)
Res. or Inst. **Street 208 cours de le Libération** **City, State Zip 38100 Grenoble FRANCE**	**Home Phone: 240-505-4127** **Alt. Phone: 301-319-3008** **E-mail: laura.tonduli@na.amedd.army.mil**
3) *Today's Date*	*Dates of Tenure*
November, 8th, 2006	from **February 17, 2004** to **December 15, 2006**

4) *Agency*	*Laboratory or Center*	*Division / Directorate / Department*
	WRAIR	**Biochemistry**

Funds De Comm. Acc
DN 12/1/06

5) *Name of Laboratory NRC Adviser* (and USMA Mentor, if applicable)

Dr Bhupendra P Doctor

6) *TITLE OF RESEARCH PROPOSAL*

EVALUATION OF VARIOUS REVERSIBLE ACETYLCHOLINESTERASE INHIBITORS AS POTENTIAL PRETREATMENTS AGAINST ORGANOPHOSPHATE INTOXICATION

7) *SUMMARY OF RESEARCH DURING TENURE* **Itemize significant findings in concise form, utilizing key concepts/words.**

1) We build up a reliable and reproducible ex vivo method that mimics the in vivo situation of a subject pretreated with cholinesterase reversible inhibitors and then exposed to organophosphate agents (OPS).

2) With this method, we determined for 5 pretreatments (pyridostigmine, physostigmine, huperzine, tacrine and galanthamine) the kinetics of inhibiton and recovery of cholinesterases activities after various OPs esposures (MEPQ or DEPQ or soman).

3) We compared these inhibitors between them to determine which one seem to be the more efficient when used a a pretreatment of a nerve agent intoxication.

4) We also determined the tissue distribution of exogenous human serum butyrylcholinesterase after intra muscular administration.

5)

(USMA Davies Fellow: please add summary of teaching, including classes taught.)

8) *RESEARCH IN PROGRESS* **Describe in no more than 100 words.**

We have investigated the efficacy of pyridostigmine, physostigmine, huperzine, tacrine and galanthamine as potential pretreatments against organophosphate intoxication (MEPQ, DEPQ or soman) using unprocessed guinea pig, rhesus monkey or human blood.
Results showed that the time for recovery of AChE activity varied with the reversible inhibitor, the OP and the species used. With MEPQ, protected AChE activity completely recovered in most of the cases whereas with DEPQ, only part of it recovered. Recovery times were usually longer for AChE protected with tacrine and galanthamine compared with AChE protected with huperzine or pyridostigmine. Data obtained after soman exposure are still in progress.

9) *PUBLICATIONS AND PAPERS RESULTING FROM NATIONAL ACADEMIES ASSOCIATESHIP RESEARCH*
Provide complete citations: author(s), title, full name of journal, volume number, page number(s), and year of publication.

a) Publications in peer-reviewed journals

- Tonduli LS, Doctor BP, Saxena A. An ex vivo approach for the evaluation of reversible inhibitors as potential pretreatments against organophosphate toxicity 2005. Chem Biol Interact. 2005 Dec 15;157-158:425-7.

b) Books, book chapters, other publications

c) Manuscripts in preparation, manuscripts submitted

- Tonduli LS, Tipparaju P, Doctor BP, Saxena A. Screening of reversible cholinesterase inhibitors as potential pretreatments for organophosphate toxicity (manuscript in preparation)

- Sun W, Tonduli L, Doctor BP, Saxena A. Tissue distribution of human serum butyrylcholinesterase in guinea pigs (manuscript in preparation)

10) *PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM NATIONAL ACADEMIES ASSOCIATESHIP RESEARCH*
Provide titles, inventors, and dates of applications.

11) *PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES*
Provide complete references: author(s), title, abstract/proceeding citation, meeting name and location.

International

- Tonduli LS, Doctor BP, Saxena A. (Oct 2005) An ex vivo approach for the evaluation of reversible inhibitors as potential pretreatments against organophosphate toxicity. VIIIth International Meeting on Cholinesterases, Perugia, Italy.

Domestic

- Wei Sun, Laura Tonduli, B.P. Doctor, and Ashima Saxena. Tissue Distribution of Human Serum Butyrylcholinesterase in Guinea Pigs. Bioscience review, Hunt Valley, Maryland, May 2006.

- Tonduli LS, Tipparaju P, Doctor BP and Saxena A. The ex vivo evaluation of reversible cholinesterase inhibitors as potential pretreatments for organophosphate toxicity
Bioscience review, Hunt Valley, Maryland, May 2006.

12) *SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES* **Include dates, names and locations of seminars.**

- Tonduli LS, Doctor BP, Saxena A. (April, 20th, 2006). Evaluation of various acetylcholinesterase reversible inhibitors as potential pretreatments against organophosphate intoxication, WRAIR, Silver Spring, MD.

13) *PROFESSIONAL AWARDS RECEIVED DURING TENURE*

14) *POST-TENURE POSITION TITLE*

Unknown at that time

15) *POST-TENURE ORGANIZATION* **Provide name and address of organization.**

Unknown at that time

16) *POST-TENURE POSITION STATUS / CATEGORY* **Please indicate only one.**

- ☐ Remain at Host Agency as Permanent Employee
- ☐ Remain at Host Agency as Contract/Temporary Employee
  Abbreviate Host Laboratory/Center _____
- ☐ Research Position at Another US Government Laboratory
- ☐ Administrative Position at US Government Laboratory
- ☐ Research Position at Foreign Government Laboratory
- ☐ Research/Teaching at US College/University
- ☐ Research/Teaching at Foreign College/University
- ☐ Research/Administration in Industry
- ☐ Research/Administration in Non-Profit Organization
- ☒ Postdoctoral Research
- ☐ Self Employed
- ☐ Other: **specify** _____

17) *APPRAISAL OF RESEARCH ASSOCIATESHIP PROGRAM*
On a scale of 1 – 10 (poor - excellent), please rate the following:

SHORT TERM VALUE

8 Development of knowledge, skills, and research productivity
Comments
This fellowship allowed me to better understand the mechanisms involved in nerve agents intoxication and improved my expertise in the chemical warfare field.

LONG TERM VALUE

7 How the National Academies Associateship award affected your career to date
Comments
The NRC gave me the opportunity to work in a foreign laboratory and thus to have a different approach of the research in my field.

LAB SUPPORT

10 Quality of support--equipment, funding, orientation, safety and health guidelines, etc.
Comments
All equipments and products I need to perfor my work were available at all time.

ADVISER/MENTOR SUPPORT

9 Quality of mentoring from the Lab NRC Adviser (USMA Mentor, if applicable)
Comments
I had the chance to have two advisers, Dr Doctor and Dr Saxena who helped me make the most of my experience here. They both integrated me in the team very quickly and had always been very motivating and supportive.

LPR SUPPORT

8 Quality administrative support from the LPR
Comments
Dr Sara Rothman had been very precious in solving all the issues I had.

NRC SUPPORT

9 Quality of administrative support from the NRC
Comments
All NRC staff had been helpful and trustworthy in answering my questions.

18) *PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT.*

Mail & Delivery Address
NRC Research Associateship Programs
The National Academies
500 Fifth Street NW, 5th Fl. Rm. 568
Washington, DC 20001

THIS FORM SHOULD BE E-MAILED
directly to your NRC coordinator

http://www7.national-academies.org/rap

Suggestions for, or problems with, forms should be directed to the forms manager, Suzanne White, at swhite@nas.edu

ID# 0380500 **Rev.10/2006** **cost-center #**

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THE NATIONAL ACADEMIES
Advisers to the Nation on Science, Engineering, and Medicine
National Research Council

Research Associateship Programs

FINAL REPORT

Print Layout View

Return this form directly to the NRC as an E-mail attachment, or print out and mail or fax.

1) *Associate Last or Family Name*	*First Name*	
Urso	**Maria**	**L**

2) *FORWARDING Address* (to which your tax statement will be mailed)	*FORWARDING Phone(s) and E-Mail* (if known)
Res. or Inst. Street **6 Walden Drive, Unit 5** City, State Zip **Natick, MA 01760**	**Home Phone: (413) 695-1697** **Alt. Phone: N/A** **E-mail: maria.urso@us.army.mil**

3) *Today's Date*	*Dates of Tenure*
September 18, 2006	from **July 10, 2006** to **September 21, 2006**

4) *Agency*	*Laboratory or Center*	*Division / Directorate / Department*
AMRMC	**ARIEM**	**Military Performance Division**

5) *Name of Laboratory NRC Adviser* (and USMA Mentor, if applicable)

Dr. Edward J. Zambraski

6) *TITLE OF RESEARCH PROPOSAL*

Effects of Prior Injury on Skeletal Muscle Inflammatory Pathways in Response to Disuse and Reloading

7) *SUMMARY OF RESEARCH DURING TENURE* **Itemize significant findings in concise form, utilizing key concepts/words.**

1) Refined research proposal and learned additional laboratory techniques necessary to execute proposed experimental design.

2) Submitted a research proposal to the Scientific Review Committee to conduct a pilot experiment on pre-existing human samples. The purpose of this work is to explore the effects of muscle injury (due to resistance exercise) on protease activity.

3)

4)

5)

(USMA Davies Fellow: please add summary of teaching, including classes taught.)

8) *RESEARCH IN PROGRESS* **Describe in no more than 100 words.**

Awaiting clearance from the Scientific Review Committee to conduct pilot experiment. Once pilot experiment is complete, I will begin work on the larger proposal.

9) *PUBLICATIONS AND PAPERS RESULTING FROM NATIONAL ACADEMIES ASSOCIATESHIP RESEARCH*

Provide complete citations: author(s), title, full name of journal, volume number, page number(s), and year of publication.

a) Publications in peer-reviewed journals

N/A

b) Books, book chapters, other publications

N/A

c) Manuscripts in preparation, manuscripts submitted

N/A

10) *PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM NATIONAL ACADEMIES ASSOCIATESHIP RESEARCH*

Provide titles, inventors, and dates of applications.

N/A

11) *PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES*

Provide complete references: author(s), title, abstract/proceeding citation, meeting name and location.

International

Domestic

N/A

12) *SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES* **Include dates, names and locations of seminars.**

N/A

13) *PROFESSIONAL AWARDS RECEIVED DURING TENURE*

N/A

14) *POST-TENURE POSITION TITLE*

U.S. Army Officer. Rank-Captian, AOC- Biochemist

15) *POST-TENURE ORGANIZATION* **Provide name and address of organization.**

Department of the Army, 1 Reserve Way, St. Louis, MO 63132
Station: USARIEM, Kansas St., BLDG. 42, Natick, MA 01760

16) *POST-TENURE POSITION STATUS / CATEGORY* **Please indicate only one.**

- ☒ Remain at Host Agency as Permanent Employee
- ☐ Remain at Host Agency as Contract/Temporary Employee
  Abbreviate Host Laboratory/Center AMRMC
- ☐ Research Position at Another US Government Laboratory
- ☐ Administrative Position at US Government Laboratory
- ☐ Research Position at Foreign Government Laboratory
- ☐ Research/Teaching at US College/University
- ☐ Research/Teaching at Foreign College/University
- ☐ Research/Administration in Industry
- ☐ Research/Administration in Non-Profit Organization
- ☐ Postdoctoral Research
- ☐ Self Employed
- ☐ Other: **specify** _____

17) *APPRAISAL OF RESEARCH ASSOCIATESHIP PROGRAM*
On a scale of 1 – 10 (poor - excellent), please rate the following:

SHORT TERM VALUE

10 Development of knowledge, skills, and research productivity

Comments

This award afforded me the unique opportunity to develop my own research ideas and protocols and work at my own pace.

LONG TERM VALUE

10 How the National Academies Associateship award affected your career to date

Comments

This award placed me in an environment where I was exposed to non-traditional career options. I am now going to serve my country as a research scientist for the US Army.

LAB SUPPORT

10 Quality of support--equipment, funding, orientation, safety and health guidelines, etc.

Comments

ADVISER/MENTOR SUPPORT

10 Quality of mentoring from the Lab NRC Adviser (USMA Mentor, if applicable)

Comments

Dr. Zambraski evaluated each of my ideas, discussed the scientific merit, and provided adequate guidance to insure that my research and learning experiences were optimal.

LPR SUPPORT

9 Quality administrative support from the LPR

Comments

NRC SUPPORT

10 Quality of administrative support from the NRC

Comments

The NRC was extremely helpful during my tenure, but most importantly, when I decided to change my career plans and become an officer in the US Army, the NRC team was extremely supportive and allowed for a seamless transition.

18) *PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT.*

Research Associateship Programs The National Academies 500 Fifth Street NW Washington, DC 20001	directly to your NRC coordinator website www.national-academies.org/rap	Research Associateship Programs The National Academies 2001 Wisconsin Avenue, NW [GR 322A] Washington, DC 20007
n:\AO Forms ID# 0621870	Research Associateship Programs cc:	Rev. 08/2006 cost-center #